

*Papers in
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M L LIDHOO

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**PAPERS IN
EDUCATION AND
PSYCHOLOGY**

M.L. Lidheo (Ed.)

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*Dedicated to the memory
of my mother,
TARAWATI and brother,
RADHA KRISHAN LIDHOO*

Preface

Research in the field of personality has transgressed the boundaries of psychology, and has touched the latest dimensions in the field of Physics, Chemistry and other Bio-medical Sciences. In a way it is a boon to psychology of personality, that most of the authors in personality theories, had their roots in the field of natural sciences. Contribution of Hippocrats, Kretschmer and Sheldon in the field of Bio-Medical psychology, Eysenck's and Cattell's contribution in the structural aspects of personality, Maslow's contribution in personality traits, all converge towards the enrichment of knowledge in the field of research in personality. It is very difficult to establish as to which school of psychology has contributed more towards a scientific understanding of human nature. But one cannot deny that a multitude of theories and accumulated research, over the years, emerged from the field of abnormal psychology. Classification of mentally sick persons on the basis of body morphology, personality traits, has phenomenally contributed towards the understanding of human personality and its psycho-biological concomitants. By now, there is a cluster of personality theories, which emanate as distinct models in psychology. These include the Freudian theory, Eysenck's Personality theory and Sheldon's Body morphology. Although there are differences among psychologists on the theoretical postulates of personality, yet they agree that no single theory can answer the composite characteristics of personality. And, therefore, an eclectic approach will be far more nearer in understanding the basis of personality than depending on a single source of information.

In Psychology, the contribution of scientists in learning and intelligence is in no way less significant as compared to

contribution of scientists in personality. Theories of learning from Ebbinghaus (1885) to Skinner and contributions in the field of Intelligence right from Galton to Spearman, Thurstone and McCatell, Guilford to Piaget, all have contributed towards the various dimensions of research in the field of personality. Similarly studies of Lewin (1948) and Atkinson (1970) in the field of social psychology, which include social aspects and personality traits, have equally added to the knowledge of achievement and motivation in relation to personality types.

The research papers published in this volume are addressed to a host of personality characteristics and their impact on adjustment, teaching-learning situation, deprivation and social backwardness. The authors have attempted to relate some of the personality characteristics with achievement-motivation, vocational adjustment, proneness to delinquency and social and psychological deprivation. It needs mention that the inferences, drawn in this volume, may not be in complete agreement with the studies conducted in past and the ones which will follow, but this offers an idea of how personality correlates react to social and psychological factors associated with achievement motivation, adjustment, teaching learning strategy and tendency towards deviance. The research studies of Mischel (1968) and Patterson (1968) have established beyond doubt that personality characteristics are not stable and constant, but these can only offer a clue to the direction of behaviour of an individual. In this direction, it is expected that this book will be a research reference for those teachers and scholars who are engaged in the study of personality correlates—their impact and reactions on scholastic achievement, level of Intelligence, neuroticism, deviancy and factors like social backwardness.

Srinagar

M.L. Lidhoo

Foreword

Education is an unfinished business, whether it is in the life of an individual, or of a society, or the state. This is largely because the heart of education is learning and becoming, which are processes which never terminate. Education is coterminous with living and changing. But the trouble is that this essential characteristic of education is not recognised by its managers and educators. A learner, however, knows it, at least, intuitively. That is why it is so frustrating to a learner. For one never reaches a dead end, where one has to stop, except by mistake. One learns to do something well, but one discovers soon that there are other ways of doing it better. Or, one achieves a position and feels that one is somebody, until one realises, and that happens soon enough, that one has yet to become somewhat more competent, or effective, or a better person. So, one finds Gujjar children in Kashmir dropping out of school, and Hanji children and their families have problems of adjustment. There is a feeling of getting nowhere. The horizon of the educational world forever recedes beyond the learner.

There are, of course, quite a number of persons, young and old, male and female, who opt for education, or are pushed out by social processes; and they seek other avenues of living. Many of them do not feel happy. We call them frustrated. Some choose socially disapproved avenues of earning something, and we call them delinquents and criminals. Some cannot even acquire the skills of learning to do something useful, and we call them mentally deficient. Of more recent development is the phenomenon of opting out of society, and of living the usual life, in a sense; and they

take to drugs. Thus, there are various psychological problems.

It is good to see that research is being done in some of the problems of personality, learning and teaching, arising out of the failure of educational and social processes, in the lives of young individuals, and of some communities, who are not yet integrated with the rest of the society.

There are twenty-two papers in the present collection, some of which are concerned with research on certain aspects of personality and their possible relationship with scholastic achievement, delinquency, mental deficiency, criminal behaviour and such other variables, while there are some other papers concerned with drug addiction, student unrest, teaching effectiveness, and aspects of educational backwardness of Gujjars and fishing communities in Jammu and Kashmir. The wide range of interest of the author, Professor M.L. Lidhoo of the Deptt. of Education, Kashmir University, Srinagar is devious. The papers in the area of psychology show his competence and interest specially in the theory and methodology of Eysenck and Skinner. The book should be of interest to the researchers in the field.

New Delhi
July 22, 1989

(Shib K. Mitra)
Formerly Director,
N.C.E.R.T., New Delhi

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Family, Class and Parental Education as the Determinants of Zeigarnik Effect

M.L. Lidhoo and Nancy Lahori

Lewin's psycho-physical concept of personality dynamics brought about a new change in the field of psychology and in the study of behaviour. According to Lewin behaviour is the function of a person in an environment, viz. $B=(P.E.)$ which again is determined by the phenomenological field (Lewin 7). In any performance a person is beset with field forces, which control and direct his behaviour. This operational situation, where in a person is in a state of tension or any blocking has been defined by *Lewin as need tension*. The successful completion of the operation releases the tension, whereas any blocking or interruption in the operation leads to a state of disequilibrium, which affects various phenomena, like resumption, memory and substitute activities Lewin (6).

Zeigarnik (11) conducted a series of experiments and found that the interruption had effects on memory. Her subjects recalled interrupted tasks more than the completed ones. This hypothesis of Lewin and Zeigarnik, that the superior RU of subjects is due to interruption was challenged by the psychologists of different schools, Koffka (5), Freud (4), Rosenzweig (10) and Alper (1).

The hypothesis in the present study is that subjects coming from middle class homes, have a superior RU, compared to the working class subjects. The main postulates of the present study are based on Atkinsons' (2) concept that middle class subjects have a high achievement motivation and high ego-involvement.

Procedure

For selection of middle class and working class samples for the present study, a survey of the schools in Srinagar, catering to the two different classes was conducted and the two schools, Burn Ball and D.A.V. Higher Secondary schools were selected as the representatives of the middle class and working class population respectively. Family in the present study has been defined as unique under the ceiling culture and class refers to social standing, position rank or reputation.

20 subjects of fifth grade from each school were randomly selected. The mean age of the middle class and working class subjects was 10.23 and 10.54 years respectively.

The average income of the middle class families was Rs. 775 P.M. and the average income of the working class families was Rs. 450.5 P.M. From the parents of the middle class subjects, 12 fathers had degrees in engineering and medicine, who were working as class I officers in their respective fields. Four fathers were officers in the defence services and the remaining were top business personnel. 12 mothers of this class had M.A., B.A. or B.Sc. degrees, who were employed as public school teachers, the rest were matriculates or inter pass who were house wives.

From working class parents, 11 fathers had B.A. or B.Sc. degrees, who were employed as secondary school teachers or the senior grade clerks, the remaining seven were average business men. There were only three mothers in this class who were matriculates, rest were unlettered and attending to their homes.

I Phase

20 Zeigarnik tasks suitable to the age and interests of the subjects were selected, such as (1) bead counting, (2) thread winding, (3) drawing a flower, (4) wire straightening, (5) Threading the beads, (6) Drawing the triangles, (7) three digit multiplication, (8) Putting knots on the nail board, (9) naming the colours, (10) solving the sums and such other tasks.

For each task average completion time was calculated on ten subjects five of whom were drawn from each class, these subjects not being included in the final experiment. The experiment was conducted separately on the middle class and working class subjects with similar instructions, viz. "We will

give you some tasks on which you have to work as quickly and completely as possible. You will raise both your hands up when the signal is given." Half of the tasks were interrupted when the subjects were most engrossed in them, and for the remaining half, they were allowed to work till completion.

II Phase

Immediately after the experiment, the subjects were conducted one by one for repeating in their own words the tasks on which they had been working. The tasks which the subjects repeated were noted against the name of each one.

The results of the study support the hypothesis. Middle class subjects have a superior RU, compared to the working class subjects. The mean of (RU-RC) of the middle class subjects is 5.0 and the mean (RU-RC) of the working class subjects is 3.7. For the test of significance of the differences between the means of (RU-RC) of the two classes "t" test was applied and the value of CR, which is 5.52, is significant at 1% level, as shown in the following table.

Discussion

Differential practices in child rearing and class orientation lead to class consciousness Maccoby (8). The working class population, due to milling poverty and social pressures, usually take refuge in self-idealisation through fantasies and reality evasion Miller (9).

TABLE I

Mean, Standard Deviation and the CR of Middle Class and Working Class Subjects in the (RU-RC) Scores

Class	N	Mean (RU-RC)	S.D. (RU-RC)
Middle Class ...	20	5.0	1.8
Working Class ...	20	3.7	1.38
CR ...	5.52	...	Significant at 1% level.

The middle class population, because of their privileged socio-economic status, become more ego-involved in terms of being and becoming Cohen (3), which lay the ground for the achievement of respectable social class status in adulthood.

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Level of Intelligence and Sex as the Determinants of Zeigarnik Effect

Dr. M.L. Lidhoo

The concept of personality dynamics in the midst of varying situations had been variously discussed by psychologists and psycho-physicists. Among the psycho-physicists, Lewin has applied Geometrical constructs and the science of magnetic fields in understanding personality dynamics within the physical and psychological constructs. According to Lewin (1922), behaviour is the function of a person in an environment ($B=P.E.$), which is determined by the phenomenological field. Lewin further states that a person who operates for any particular behaviour is in the midst of tension till the goal is achieved. The successful achievement results in releasing of tension, whereas any interruption in the operation leads to disequilibrium which results in frustration, aggression or withdrawal (Lewin, 1935). Lewin and his associates ; Zeigarnik and Osiankina conducted a series of Laboratory experiments on ego-oriented and task-oriented situations. Similar experiments have also been conducted by (Zeigarnik, 1927 ; Rosenzweig ; 1943, Atkinson, 1953 and Lidhoo, 1971). Experiments on the recall of completed (RC), and uncompleted (RU), tasks have been conducted under various situations like level of intelligence, social class and sex differences.

The present investigation is based on two null-hypotheses which are stated as under :

1. "That there is no relationship between level of intelligence and recall of uncompleted tasks".

2. "Girls, as compared to boys, do not differ in the recall of interrupted tasks".

Procedure

Two public schools in the city of Srinagar run by Christian missionary were chosen for the purpose of the study. These schools were Bisco-Memorial High School for boys and Mellionson High School for girls. These schools represent students from middle class families, whose income ranges between 1500 and 3000 rupees. Sixty subjects' i.e. 30 boys and 30 girls within the age range of 12 to 13 years were randomly selected on the basis of chits drawn for both boys and girls.

Administration of Tests

Keeping in view the age and language capability of subjects Bhatia-Battery performance test (non verbal), was selected for the measurement of intelligence and for R.U. and R.C. twenty tasks, based on Zeigarnik's pattern, and suitable for the age were selected for the experiment.

First Phase

In the first phase of the experiment Bhatia Battery Test of Intelligence was administered individually. Subjects with an I.Q. of 90 and above were treated as high intelligent subjects; whereas subjects with an I.Q. of 79 and below were treated as low intelligent subjects. In this way the subjects both boys and girls were split into high and low I.Q. groups.

Second Phase

In the second phase of the experiment, 20 tasks were given to subjects in two groups i.e. boys and girls separately. The subjects were instructed as, "I will give you some interesting tasks on which you will work till the task is completed". As far the design of the experiment the subjects were permitted to complete half the tasks and were interrupted in half of the tasks when they were highly engrossed with these tasks.

Statistical Analysis

After the completion of the experiment each subject was asked to recall the tasks on which he/she had been work-

ing. The recall of the tasks, against each of subject was recorded while keeping in view the sex and the level of intelligence of each subject. The data were analyzed with the Fisher's 't' test as shown in the Table I and II.

TABLE I

Mean SD and 't' for the recall of uncompleted tasks between high/low intelligent subjects

	N	\bar{X}	SD	SCD	't'
High Intelligent	39	68.08	16.0	3.66	2.92*
Low intelligent	21	78.8	12.0		

*Significant at .01 level.

TABLE II

Means, S.D. and 't' of Ru between boys and girls. (N=30 each)

	\bar{X}	SD	SCD	't'
Boys	68.51	16.40		
Girls	75.13	15.20	4.08	1.62*

*Insignificant.

Discussion

On the basis of statistical observations, as shown in tables I-II it is established that subjects with high intelligence as compared to subjects with low intelligence have a poor recall of RU Tasks (t 0.01 level). In this way the null-hypothesis, "that there is no relationship between level of intelligence and recall of uncompleted tasks", is rejected. There are different views on the recall of RU between high and low intelligent subjects. Bailer and et, al. (1960), have

shown that subjects with high I.Q. prefer to repeat the interrupted tasks as compared to the completed ones. Lewin (1933), and Kopke (1933), on the other hand have observed that subjects with high intelligence avoid the recall of uncompleted tasks. Study of Rosenzweig (1933,b), has shown that intelligent subjects evade the recall of painful experiences like uncompleted tasks as compared to low intelligent subjects who are prone to failures.

While comparing boys and girls on the recall of uncompleted tasks, as shown in Table II, the findings have shown that the differences are insignificant. These results are not in line with, Zeigarnik (1927) and Abel (1941) who have shown that girls compared to boys have a better recall of RU tasks as compared to R.C. tasks. In this way the second null-hypothesis in the present study, which states, "Girls, as compared to boys do not differ in the recall of interrupted tasks", is retained.

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Operant Conditioning and Feed-Back as the Determinants of Behaviour Modification

Dr. M.L. Lidhoo and A.K. Sapru

The science of conditioning in psychology and education dates back to 1903, when I.P. Pavlov demonstrated various paradigms associated with the conditioning of dogs in laboratory situations. Pavlov, who was basically working in the field of physiology and the functioning of glands, built his hypothesis against the background of neuropsychology and psycho-physiological determinants operating on behaviour. After Pavlov, his successors like Bekhteriev in Russia and Thorndike in America replicated the conditioning experiments under different situations. Around 1912, when the father of behaviourism, J.B. Watson, established the basis of his school, the impact of latter associationists receded. Watson's experiments, on animals and human subjects, opened a new vista for the study and control of behaviour among animals and human subjects. These new innovations in the field of behavioural study exercised the attention of various experts who addressed themselves to the study and modification of behaviour. Among the pioneers, B.F. Skinner, an apostle of behavioural psychology, reoriented the whole set of behaviourism with new innovations and under different modalities which include operant and instrumental conditioning (Skinner 1953). Under the method of operant conditioning the emission of a desired behaviour is shaped through repeated trials till the target behaviour is achieved without any error (Honig 1966). The Skinnerian models are broadly based on environmental situations designed by the experimenter for achieving the goal-oriented behaviour of his subjects. Skinner demonstrated such changes of behaviour among pigeons, rats and children. In

his words Skinner (1954) states, "An organism is just like a machine and can be controlled by the operations which determine his behaviour." Any response according to Skinner which approximates towards the target behaviour needs immediate reinforcement so that the subject emits same behaviour with successive progressions towards the goal. Skinner identified such a paradigm with the concept of input and output in a machine. So much so, Skinner contended that as machines are controlled by programmed settings, humans in the same manner can be controlled for achieving the desired behaviour. This approach of Skinner bears a new logistics as regards the operant-conditioning vis-a-vis classical conditioning. According to Kimble & Hilgard (1961), the distinction between classical and instrumental conditioning is in terms of the consequences of the conditioned response. In classical conditioning, the sequence of events remains independent of subject's behaviour. Whereas, in instrumental conditioning, by contrast, rewards and punishments are made to occur as a consequence of learner's response or failure to respond. Thus it is clear that in classical learning, it is the experimenter who operates for the behaviour of the subject whereas in instrumental conditioning, it is the subject who operates for his own behaviour. The Pavlovian dog brings saliva to its mouth with the sound of bell or by the appearance of the person with whom food association is conditioned. On the contrary, the pigeon and the rat in a Skinner's box operates, such that the reward or punishment is contingent on his behaviour.

Reviewing the adequacy, economy and usefulness of experiments designed by Skinner, educational and clinical psychologists adopted these models in their respective laboratories. The Skinnerian models have made very successful strides in the field of child psychology and in the treatment of mentally sick—Williams (1959), Hart, et al (1964) and Wolf (1964). An over all review of Skinner's (1953) studies generated a new dimension known as behaviour modification. The behaviour of any organism including humans can be mechanised and brought under control into a desirable form. Again according to Skinner any abnormal behaviour is the outcome of reinforcements—positive or aversive. The same behaviour can be modified by operating a desirable and socially accept-

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able programme, based on conditioning and gradual approximation.

Purpose of the Present Study

Behaviour modification techniques, all over the world, have attained appreciable success in treating various types of problems among children in schools and the mentally sick patients in psychiatric institutions. Among the prominent studies, in the areas mentioned above, are Ullman and Krasner (1965), Bijou (1961, 1963, 1968, 1971, Lovaas & Bucher 1974). In India research in behaviour modification has not attained the degree of importance as it should have, keeping in view the enormity of children suffering from adjustment problems, problems in the skill of teaching and learning. There are just a few studies in which attempt has been made to improve the behaviour of children and learning difficulties or problems of adjustment. These studies include Srivastava et al (1971), Manju (1971) and Lalita (1982). May be that the lack of attention towards research in behaviour modification in our country is because of various control paradigms and proximal attention at constant intervals which the experimenter needs in controlling and shaping the behaviour of subjects under investigation. In one of the pioneering attempts Lalita (1982) undertook the modification of teaching learning behaviour of children with mild retardation problem. The author selected 50 schools going children with various teaching and learning problems. For each subject modification schedules were developed and these were operated upon with the co-operation of parents and teachers. By using the techniques immediate feed-back and gradual approximation the investigator managed to help the subjects in reaching the terminal behaviour. No doubt she had to span out the schedules of behaviour from two weeks to one month for each child.

While looking into the experimental and the technical snags involved in behaviour modification research the investigators in the present study considered to involve pigeons as subjects for their study. No doubt the study is not of any novel type because such studies have already been conducted by Skinner and his followers, but still it was an attempt to experience the magnitude of problem while controlling animals over a period of time and shaping their behaviour in the

desired pattern. The specific problem that was considered for investigation was framed under the title "Operant Conditioning and Feed Back as the determinants of behaviour modification."

Objectives of the Study

The study is based on the two basic objectives which include :

- (i) That operant conditioning provides immediate feed-back and thus facilitates learning skills ;
- (ii) The gradual approximation towards goal directed behaviour with immediate feed-back saves the learner from detours.

Operational Definition of Variables

1. Operant conditioning in the present study has been defined as series of responses emitted by the subject which help him to arrive at target behaviour.

2. Feed-back is the immediate queue that helps the subject to follow goal directed behaviour. If the response of the subject is not goal directed the negative feed-back help in inhibiting the behaviour.

3. Behaviour modification in the present study has been adopted after Bijou's concept which explains that any socially adaptive behaviour of scholastic performance can be improved by gradual approximation towards the terminal or target behaviour. Hence, in the present study behaviour modification refers to helping the pigeons to peck at a specific spot so as to get pelets of food released from the electrically connected magazine.

Methodology and Procedure

In the proposed research it was resolved that the Skinnerian model based on gradual approximation and shaping of the behaviour towards the terminal goal will be followed. Hence the model for the present study was designed in the following order :

$$T=F(R.B.)$$

which approximates the target behaviour, where (T) is the reinforcement ;

(B) is the behaviour and
(R) is the reinforcement.

With this model in view, attempts were made to devise and improvise an experimental box for the proposed study.

Experimental Design

The design of the experiment followed was that of Reese (1962)—“Experiment in Operant Behaviour.” A card-board box of 1½' square shape was built up with an equal height for the experiment. One side of the box, wherefrom the pigeons were watched, was fitted-up with a full size glass and electrical operations were arranged from the rear. These operations were :

(a) The star, on which the pigeon had to peck, was electrically connected with an automatic food dispenser facing the pigeon. The star on the card-board was placed at the height of five inches from the base so that the pigeon could face the star and peck conveniently. The food tray was placed against the card board wall at a height of three inches adjacent to the star.

(b) *Electric circuit* : The star was supported against a metallic piece connected with one end of wire leading to mains. When subject pecks on the star, metallic piece is pressed and it strikes with another metallic piece which is further connected with another wire and thereafter with an electromagnet. The second lead of mains is directly connected with second lead of electromagnet. With the pecking of the subject on the star the circuit completes, the magnet gets charged and pulls the soft iron piece which serves as a lid to the grain storage box, resultantly allowing a sizeable quantity of grains to fall into the food tray. This automatic mechanism reinforces the subject as and when he pecks at the star. Thus the star serves as a switch for operating the electromagnet and delivering the food to the subject.

Procedure

Six laboratory pigeons with an average age of one year were selected for the proposed investigation. The schedule of experiment was arranged in such a way that each pigeon could be observed in the experimental box for one hour's duration

daily. The moments of each pigeon were recorded on data sheet developed for each subject. The identification of each pigeon was made with the help of a coloured thread placed round the neck of each pigeon. In the beginning the subjects exhibited a natural attitude of uneasiness and discomfort while they were placed in the experimental box individually. In this way there was not any goal directed attempt by any subject for the first three days observation. However, it needs mention that each subject was starved for about 20 hours before it was placed in the experimental box for observation. Two pigeons developed such degree of frustration that they could not be contained in the experimental box and had to be dropped from the proposed investigation. After fifth day of the experiment the remaining four pigeons started making some random pecks around the star (target). Any peck which was directed towards the star was being automatically reinforced with pelets being released from the magazine of the box containing grains. The daily scores and the desired changes in the behaviour of each pigeon are shown in four tables—Table I to IV, shown as under :

**Cumulated Record of Pigeon Number—I, II, III & IV
From Base Line to the Target Behaviour**

Time for observation—one hour.

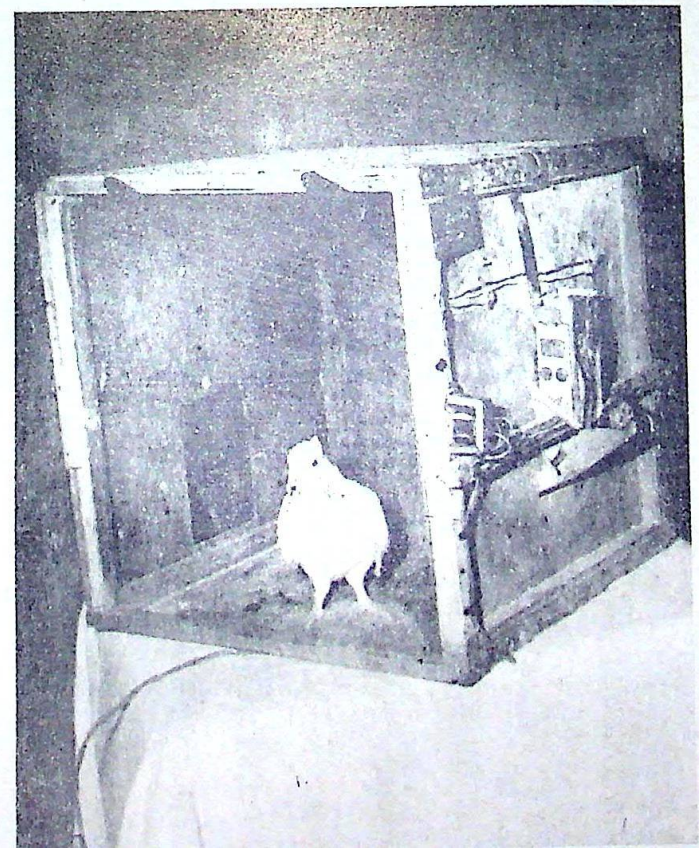
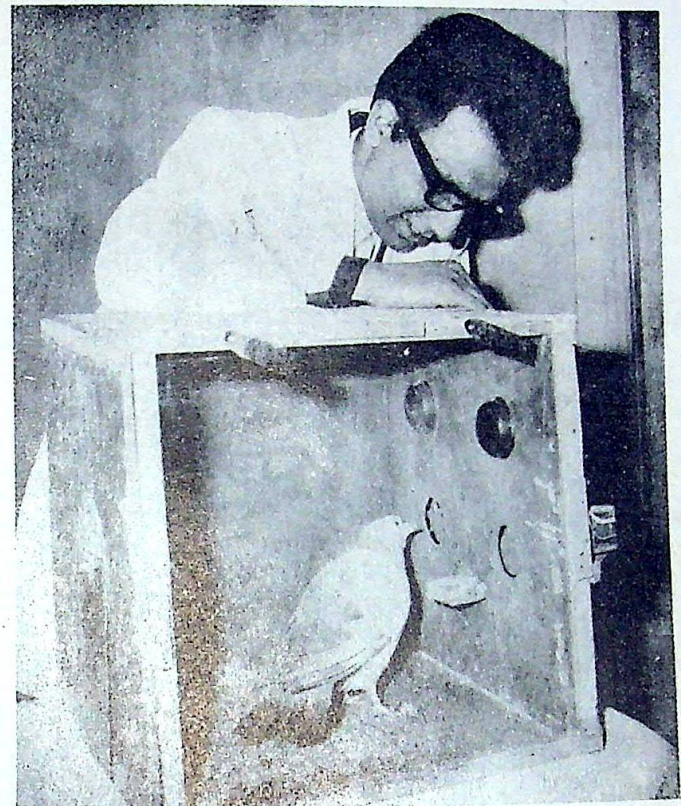
		Ad. Lib weight—250 gms. 240 gms. 240 gms. 260 gms.			
		Pigeon I Pigeon II Pigeon III Pigeon IV			
		Responses Responses Responses Responses			
S. No.	Date	(N.R.)	(N.R.)	(N.R.)	(N.R.)
1	2	3	4	5	6
1.	12th Aug.	0	0	0	0
2.	13th Aug.	0	0	0	0
3.	14th Aug.	0	0	0	0
4.	15th Aug.	0	0	0	0
5.	16th Aug.	0	0	0	0
6.	17th Aug.	1	2	1	1

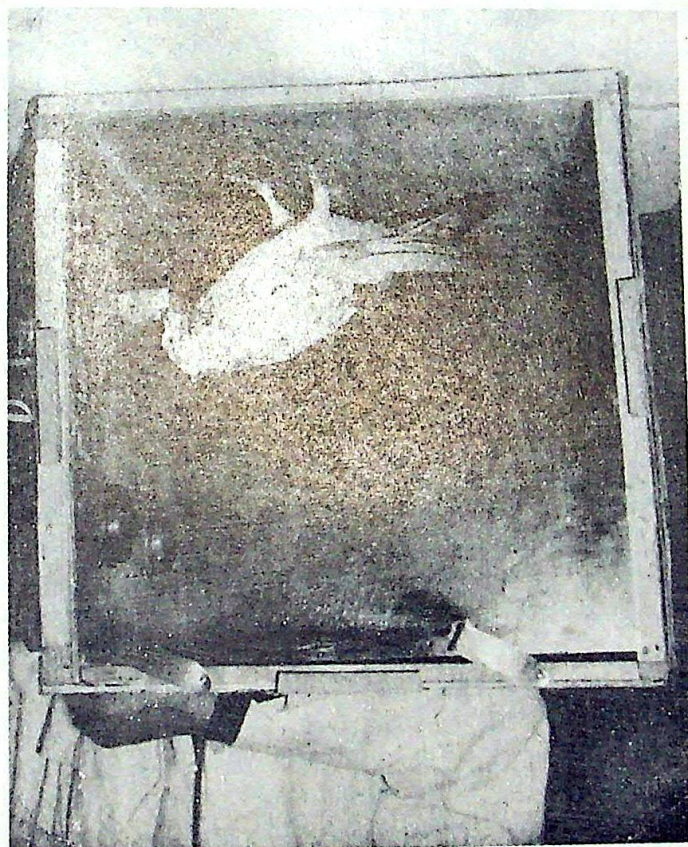
1	2	3	4	5	6
7. 18th Aug.	1	3	1	2	
8. 19th Aug.	2	5	2	3	
9. 20th Aug.	3	6	2	5	
10. 21st Aug.	4	8	3	6	
11. 22nd Aug.	6	9	4	8	
12. 23rd Aug.	7	11	6	9	
13. 24th Aug.	8	14	7	11	
14. 25th Aug.	10	16	8	13	
15. 26th Aug.	11	19	10	15	
16. 27th Aug.	13	22	11	17	
17. 28th Aug.	16	25	13	20	
18. 29th Aug.	19	28	15	23	
19. 30th Aug.	23	32	17	26	
20. 1st Sept.	27	36	20	30	
21. 2nd Sept.	32	39	23	35	
22. 3rd Sept.	37	45	27	41	
23. 4th Sept.	43	49	32	49	
24. 5th Sept.	50	54	40	55	
25. 6th Sept.	56	60	48	60	

Apart from the tables, three photographs of the pigeon at different stages of behaviour modification are shown in the opposite plates.

In the beginning there was hardly any response from the subjects that would approximate towards the target behaviour. But after seventh trial the number of pecks towards the target increased from 15 to 38 varying among the subjects. The graph of the proportional increase of pecks, for each subject, are shown in the graphs against each score sheet.

The experiment was terminated after 15 days as each subject had acquired perfect mastery in pecking at the target behaviour. After each experimental duration, the subjects had free access to food and drink. Handling of subjects during the experiment was strictly followed according to Ree's directions.





Dicsussion and Interpretation of Results

The science of behaviour modification is a recent departure, as compared to the old stimulus and response theory in learning. Under the old paradigm the intervening variables between stimulus and response were not being taken into account while helping children or animals to learn a new design or a maze, in a laboratory situation. In this way it is clear that the elicited response was not the outcome of known stimuli but also of the intervening changes taking place in the thinking and operation of an organism. Skinner took a serious notice of such lapses while working with children and pigeons and as a result established a new paradigm based on the behavioural contingency. These vital changes in the learning brought a new change and a new hope in teaching and learning at all levels. In class room learning and for the laboratory animals Skinner suggested that the total behaviour to be acquired be broken into small meaningful chunks and after each successful attempt children or the animals in a laboratory condition be directed to the next chunk of behaviour till the total skill is acquired.

In the present study the investigators strictly followed the Skinnerian model for helping pigeons to acquire mastery in monitoring the electrically connected food tray. As mentioned earlier, the experiment involved six pigeons of which two were dropped from the study and the remaining four acquired complete mastery by using the methods of immediate feed back and gradual approximation till the desired skill was acquired. The experimental model in this study was strictly based on reinforcing the behaviour which approximated towards the target behaviour. It needs mention that for each pigeon a base line was established, where from the pigeon was conducted towards the terminal behaviour. Each successful response of a pigeon reinforced the next response towards the goal directed behaviour. And in this way the chain of small chunks of successful responses converged in the total mastery of the subject (pigeon) in acquiring the skill. The cumulated data of pigeon No. 1, as shown in table reveals an interesting change in his entry behaviour and the target behaviour. Similar results are observed in the modification of behaviour of the other three pigeons. According to Skinner, as stated by Recse (1962), "The differential

reinforcement (q.v.) of successive approximations of some desired behaviour in order to increase the probability of occurrence of a response that is seldom or never emitted." Stray attempts of the subjects were not rewarded and got extinct in the process of approximating the behaviour of each subject nearer to the goal. It needs mention that gradual approximation and immediate feed back brought a phenomenal change among the subjects. Skinner (1953) and Bijou (1966) have conducted successful experiments in modifying the behaviour of problem children. Ferster and Demyer (1966) also conducted a child for modelling his behaviour, which was accomplished by providing immediate feed back (glass of milk) to the child. Although the investigators were not able to conduct similar studies on some children due to which pigeons had been considered, yet after some years on the successful completion of the present study the senior author managed a successful study on the scholastic improvement of children with mild mental retardation (Lidhoo and Lalita 1980). It is expected that such studies will usher in a new dimension in the purposeful and socially desirable changes in the behaviour of such children as are suffering from poor adjustment, poor scholastic achievement and the like.

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Individual Counselling—Its Effect on Bright Underachievers

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and

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Intelligence as a field of research has extensively exercised the attention of psychologists, biologists, and parents. As compared to intelligence no any other area seems to have been explored from the point of view of various components associated with the biological factors and social determinants that shape the mental capability of a child. The concept of individual differences set forth by Galton (1889), subsequently followed by Goddard (1912) and Terman (1916), has established beyond doubt, like other personality characteristics, intelligence is biologically determined and no two individuals in intelligence can be alike. Binet, who pioneered in the test construction, has established that level of intelligence is a genetically oriented phenomenon and environment in home or classroom can improve or retrograde level of intelligence to a limited level.

Binet's study directed research in the field of intelligence towards social factors like social class, family background, level of aspiration and motivation. These areas have also encouraged research in scholastic achievement, level of intelligence and achievement. There are many research studies a galore which have proven that gifted or the bright children are also superior

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in classroom performance (Singh, 1987, Kohli, 1975, Pandey and Singh, 1970, Cohlar, 1947, Freeman, 1942, Chauncey, 1929) and general social adjustment (Seetha, 1975, Gallagher, 1958, Martyn, 1957, Kerstetter, 1952 and Terman, 1925). However, there exists a demographic gap in research on gifted or bright children as regards the urban and the rural population of the country. On the basis of research gaps it is felt that very little information is available regarding the bright children attending millions of schools in rural India. It is interesting to note that there is not much of information gap regarding economic, social and health conditions of people living in rural India and representing backward communities, as it is in the area of intelligence and scholastic achievement.

Reviewing the literature on the study of bright children, there is hardly any reference which is based on the study of bright children from backward communities and rural India. It is with this intention that the investigators in the present study addressed themselves to the problem of underachievement of bright children in some of the remote parts of the valley of Kashmir. Although there are some casual observations based on the annual reports of higher secondary examinations, that rural students also figure in the merit list but no scientific study supports this view-point. Abraham (1974), is of the opinion that in urban situations competition and a rich academic exposure helps some of the students to over-achieve as compared to some bright students in rural areas whose achievement remains low as compared to their level of intelligence. In this way the rural bright subjects due to lack of competitive atmosphere and poor educational facilities remain underachievers and are thus deprived of the best opportunities in their educational and occupational choices. This has also been supported by (Reddy, 1974, Sharma, 1975).

Purpose

The valley of Kashmir is one of the backward states of our country and the term backwardness is not confined only to economic and social prosperity but also pervades in educational and professional opportunities. Literacy statistics of the valley according to 1981 census for both sexes is 26.67% (Males 36.29%, females 15.88%). Thus as a matter

of fact a sizable chunk of our school and college going population remains unlettered and in this way the nation loses a good percentage of talent which is not utilized in any constructive form. Not only that but because of poor motivation among parents in the rural Kashmir, the drop-out rate of students from class 1st to class 10th is very high.

Underachievement in the present study has been considered as an important factor because a developing country like ours cannot afford to lose its talent for want of proper motivation and competition. Even otherwise the developing countries including India lose thousands of gifted scientists, scholars, who migrate to developed countries in search of better avenues. A poor country, like India whose economic, scientific and technological future rests on microscopic minority of the bright children; needs to augment extraordinary efforts in nurturing the talent of such children.

Taking into consideration the cause and effect of any given situation, in the light of scientific analysis, it is pertinent that the factors generating a cause be defined at length. It is beyond doubt that our country, with next highest population density, in the world, lacks technical knowhow which should help it to come out of mundane and conventional living style. Under such circumstances the country's negligence towards our bright scholars is not only threatening our future prosperity but also crippling the opportunities of those who are endowed with gifted characteristics related to intelligence and its cognate factors. Our country must take into account the talented children studying in different schools in the urban and rural India. It is essential to cite the reference of Shaw and Grubb (1958) who recommend that future prosperity and progress of a country rests on the utilisation of talent of such children who are gifted with high intelligence. Keeping in view the pace with which our population is growing and subsequent requirements, it is pertinent that the recommendations of Education Commission (1964-66), for having guidance and counselling services in our schools, be taken up on priority basis. This is more true about those children whose performance in schools is not in commensurate with their level of intelligence. This has become more important in the context of New Educational Policy (1986), which envisages that bright and gifted all over the country will be

provided with the best educational facilities.

As regards the importance of guidance and counselling services Sinha (1970) states :

“Measures like counselling and a programme of student personal service are urgently required if the rate of failure and consequent wastage of manpower is to be reduced”. (p. 172).

In the same vein Rogers (1939), observes that the complexities of modern living creates problems of personal and social adjustment which are far too difficult for many young people to solve satisfactorily in the absence of adequate guidance and counselling services. Guidance and counselling is equally essential for students from different shades and persuasions, who converge into classrooms with divergent background.

As compared to rural children ; urban children are fortunate in having a better educational environment because of an enriched social and educational atmosphere. In order to bring our rural children also to a reasonable level of social and intellectual competition, it is necessary that an awareness of opportunities through competition be brought among these children through guidance and counselling services.

Statement of the Problem

Keeping in view the objectives of the proposed investigation the investigators made a review of the studies on under-achievers and observed that Bhatnagar (1976), Mehdi (1965) and Pierce (1960), have already established that non-cognitive factors like lack of educational atmosphere in the family, poor family conditions and low motivational level are the factors which affect the scholastic performance. The investigators also observed that the school setting in a rural background fails to cater to the intellectual capability of bright students, because the teachers pursue an approach in teaching that generally goes with the average students in the class. In this way the bright students who are ahead of the class, in comprehension and understanding, are subjected to monotony and boredom due to which they resort to such actions as are unacademic and undesirable. This is one of the important aspects, where the

need for guidance is felt necessarily. In the absence of adequate and socially desirable avenues for the bright students, they lose the charm of their creative talent and engage themselves in such activities which interfere in their scholastic achievement. With these clues in mind and the broader canvas of rural background, regarding teaching learning atmosphere, the problem of the present study was shaped and formulated as :

“Individual counselling—its effect on bright underachievers”.

Objectives of the Study

The present investigation is not in any way an attempt in the midst of wilderness or an exercise in futility. It is a concerted attempt to apply the established measures in helping our bright underachievers secure maximum percentage of marks at various grade levels. Experts who have successfully administered such treatment programmes, as have helped the students to improve their scholastic achievement are (Subramania, 1979, Bhatnagar, 1976, Gaur, 1970, Broadel, et al 1959, Frsehlich, 1947). The commonly used methods or remedial measures for helping students to improve their scholastic achievement are strengthening their need for better achievement through motivation, increasing an awareness for a competitive atmosphere in education and in choosing a vocation. Besides the above mentioned treatment programme a positive change in the attitude of parents and teachers for higher achievement of students has shown very positive and fruitful results. While designing the operational model of the present investigation a due consideration was given to the above mentioned treatment measures and the objectives of the study were given the formal shape as under :

- I. Bright underachievers will be classified on the basis of the test scores on a culture free intelligence test and overall marks in the classroom performance of each bright scholar.
- II. Some non-cognitive factors associated with bright underachievement will be studied.
- III. Strategy of remedial measures will be evolved and

developed on the basis of factors which interfere with the achievement of bright subjects.

IV. Bright underachievers will be helped to improve their performance by boosting their self-assessment for a better performance.

V. Goal directed objectives will be improved with the help of individual counselling sessions.

Hypotheses

Major :

“Individual counselling helps in increasing the Achievement of Bright Underachievers.”

Minor :

“Some non-cognitive factors are associated with bright underachievement”.

Operational Definition of Variables

Definition of variables in the light of treatment measures, to be adopted for bright underachievers have been considered and translated under the following terms :

1. Bright subjects :

Bright subjects in the present study are, “those whose IQ points fall among the top 20% on APM and have secured 60% and above marks in their classroom performance”.

2. Bright underachievers :

Bright underachievers in the present study are subjects, “with above average intelligence (top 20% scorers in relation to IQ points) and below 60% marks on scholastic achievement”.

3. Achievement :

In the present study achievement means, “the

aggregate marks gained by sample subjects in the pre and post counselling examination”.

4. Underachiever :

Under achieving subject in the present study is one, “whose actual achievement, as indicated by scholastic attainment in school, does not measure upto his potential achievement, as indicated by his mental abilities”.

5. Counselling :

Counselling in the present study means, “to help a student understand his potential and come over his problems which distract his scholastic performance. The problem may be in school, in his personal manners like study habits or in the attitude of parents towards academic development of the subject”.

Methodology

Techniques in research have been variously discussed by those who address themselves to the assessment of research methods involved in different situations. However, it is by following a sequence of steps in any research method, which help in sifting the grain from the shaft. In the light of the objectives which have been discussed earlier, the investigators worked out a blueprint for the completion of the proposed study. Firstly it was decided that the study will be confined to the children studying in 9th class in the two tehsils (Pahalgam and Bijbehara), in district Anantnag. The two tehsils were considered with the understanding that what will emerge in our findings regarding the children of these two tehsils will hold true for the entire valley. Secondly on the basis of preliminary survey it was decided that children studying in 9th class will be the sample of the study because the children of this age-group are at a stage, in their life, when they look forward for their aspirations in the world of vocation. Besides, these children are amenable to guidance and counselling in order to achieve a better level of performance. Thirdly screening of bright underachievers was considered to be achieved with the help of annual examination marks and IQ

test scores on a culture free test of intelligence (APM). Lastly the investigators resolved that the non-cognitive factors which interfere with the expected level of achievement of bright subjects will be established on the basis of a Questionnaire to be developed by the investigators.

Procedure

Phase I

Six hundred male subjects of eleven high and higher secondary schools from tehsil Pahalgam and Bijbehara were contacted for the preliminary survey. These subjects were studying in class 9th and were in the age group of fourteen to fifteen years. Raven's Advanced Progressive Metrices (APM) was administered to all the subjects, arranged in small groups. Subjects whose IQ scores were above the 80th percentile ($N=120$) were considered to be bright. Besides the administration of (APM), for measurement of intelligence, the annual examination marks in all subjects were recorded for the last two examinations (7th and 8th), to establish the level of scholastic achievement. The mean of the two was considered as a criterion for the level of scholastic performance. Those of the bright subjects who had secured 60% and above marks were considered to be normal achievers ($n=59$), and were not included for further investigation. The rest of the subjects ($N=61$), whose scholastic achievement was below 60%, were termed as bright underachievers and considered for the final study. One student was dropped from the sample as in this case parallel group experimentation was not possible.

Phase II

The sample of 60 subjects, bright underachievers, was split into two parallel groups of 30 subjects each (Exp. and control). The factors of common identity between the two groups were IQ scores and level of scholastic achievement besides similar family background. The concerned class teachers were requested to give a test (pre-test), in all subjects to both experimental ($N=30$) and control ($N=30$) group. The marks of this test were recorded against each subject. For the placement of individual problems of each

subject in the experimental group, a Questionnaire was developed by the investigators in closed form ('yes', 'No'), representing three major areas, viz. Home Background (H_B), Study Habits (S_H) and Need Achievement (N_A), shuffled over twelve sub-areas: Attitude of parents and Sibling (A.P.S.), Parental Status (P.S.), Individual position in the Home (I.P.H.), General Home background (H.B.), Time Appropriation (I.A.), Content of Study (C.S.), Interference During Study (I.D.S.), Other Indulgences (O.I.), Attitude Towards Education (A.E.), Attraction towards places of learning and persons (A.P.L.P.), completion of Tasks (C.T.), Personal Satisfaction (P.S.). The Questionnaire was duly screened for item analysis and appropriate methods for the establishment of reliability and validity were evolved. Out of 132 statements only 112 were retained with a reliability coefficient (split half) of .78 and a validity coefficient of 9.9 (on the basis of the opinion of Judges). The Questionnaire was administered in different sittings to the experimental group and the individual problems of each subject were recorded.

Phase III

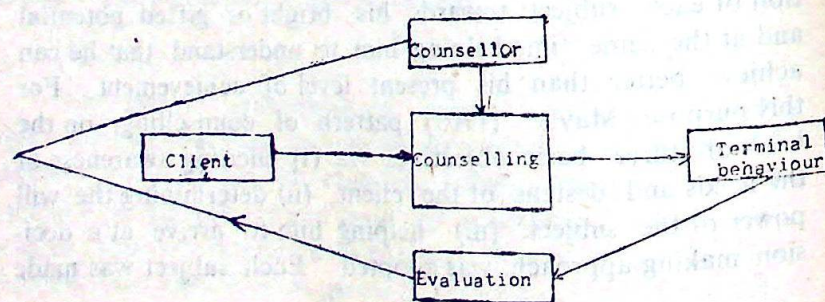
Counselling Treatment: After the specification, with the help of questionnaire, of the problems of each subjects in the experimental group, counselling method of free association was employed in order to confirm the specific problems of each subject. On the basis of the observed problems the investigations structured individual counselling sessions, ranging between four to six, spread over a period of two months. This helped the investigators in attracting attention of each subject towards his bright or gifted potential and at the same time helping him to understand that he can achieve better than his present level of achievement. For this purpose May's* (1969) pattern of counselling, on the basis of three basic objectives viz. (i) eliciting awareness of the needs and designs of the client, (ii) determining the will power of the subject, (iii) helping him to arrive at a decision making approach, was adopted. Each subject was made

* May, R. (1969) Referred in Keat D.B. (1974) Fundamentals of Child Counselling, Houghton Mifflin Boston, pp. 61-62.

aware of his high level of intelligence and factors interfering with his scholastic performance were analysed under three major categories. These include, (a) poor educational background in the family, (b) poor study habits, and (c) low level of achievement motivation. Attempts for boosting the scholastic achievement of each subject were made in the light of above mentioned factors. In the process of counselling, where ever it was felt, the investigators narrated the stories of distinguished luminaries in the field of science, technology and other disciplines. This helped the subjects in resolving a firm determination for improving their scholastic achievement. An appropriate time-budget was also given a formal shape with mutual understanding of the subjects. This pattern was followed on the basis of Williamson's (1939), counselling method. Attempts were also made in elevating the self-regarding sentiment and ego-development of each subject following the Rogerian (1959), non-directive approach.

In the process of counselling three major objectives were taken into account, these include :

(1) existing behaviour in which bright subject was underachieving, (2) desirable change in underachieving behaviour, (3) academic achievement in consonance with cognitive ability after counselling. General model of counselling developed by the investigators for each individual subject is given as under :



The model provides a guideline for the counsellor to deal with a client—identify the problem, process it through counselling and get an output, evaluate it and come to the conclusions of the remedial measures of the problem concerned. If the output is discouraging new objectives are framed, strategy is changed and what so ever is needed to replace is replaced and error is removed. Again processing is done and needed output is achieved.

Phase IV

After having completed the counselling sessions with the experimental group (N=30), the investigators confirmed, on the basis of verbal reports of these subjects, that they have understood the reasons of their poor scholastic achievement. Subjects admitted and they are now working on the time-budget mutually formed. The teachers also confirmed that the counselling programme has worked and the students (Exp. group) are showing pronounced improvement in their classroom behaviour. In order to confirm the effectiveness of the concluding programme objectively the class teachers were requested to administer a scholastic achievement test (post test) to all the sixty subjects (exp. N=30, control N=30). The marks were recorded.

Analysis of the data

In order to analyse the data \bar{X} , SD and 't' test were employed. On the basis of the achievement scores, of pre and post test of the experimental group, it was observed that there was a significant improvement in their scholastic performance, shown as under :

TABLE I
The Significance of mean difference of pre and the post test performance score of the experimental group (N=30)

	\bar{X}	S.D.	SED	't'
Pre-test	305	100.52	25.38	2.05*
Post-test	357	96.02		

*Significant at 0.05 level.

On the basis of the pre and post test scores of the control group it was observed that there was an insignificant decrease in their scholastic achievement as shown in Table II.

TABLE II
Significance of mean difference of pre and post test performance scores of the control group (N=30).

	\bar{X}	S.D.	SED	't'
Pre-test	284	64.76	15.41	0.31**
Post-test	279.17	54.14		

An analysis of the problems depicted by the subjects in the experimental group through the Questionnaire and later on confirmed through individual counselling sessions, clustered into following three major categories: (I) Sick Home background, (II) Poor study habits and (III) Low level of need achievement. The distribution of subjects over these factors is shown in Table III.

TABLE III
Distribution of Bright Underachievers (Experimental group of N=30) in relation to factors of underachievement.

Problem area	No. of cases
H _B , S _H , N _A	8
H _B , S _H	8
H _B , N _A	3
S _H , N _A	4
H _B	4
S _H	2
N _A	1

H_B : Home background
S_H : Study habits
N_A : Need achievement

** Insignificant.

Discussion and Interpretation

On the basis of the counselling sessions the investigators observed that there was a significant difference between the pre and post counselling performance test scores of the experimental group (N=30). The means difference was found statistically significant beyond 0.05 level, as shown in Table No. I. On the other hand there was insignificant decrease in the post-test performance scores of the control group. Statistically the mean difference between the pre and post test performance of the control group (n=30) was insignificant. The marked difference in the post-test performance scores of the experimental group can be attributed to no other factor except the manipulation of the independent variable (individual counselling). The results are in line with Subramania (1979), Bhatnagar (1976), Brodel, et al (1959) and Froehlich (1947). The findings of Gaur (1970), are partly in line with the present study, as there has been significant difference in the achievement of school failures in only second test but in first, third and fourth no significant changes have been found statistically in the achievement of experimental group as compared to control group. With this background, the main hypothesis of the present study, "Individual counselling helps in increasing the achievement of bright underachievers", stands confirmed.

The problems revealed by the subjects in the experimental group, through individual counselling and the administration of the Questionnaire, have made it obvious that some non-cognitive factors are responsible for the underachievement of bright subjects. Table III makes it clear that there were eight students whose problems existed in all the three areas (H_B, S_H, N_A), eight subjects had poor study habits and unhealthy home atmosphere, three subjects had poor need achievement and sick home background, four subjects were not budgetting their time properly and had very low level of need achievement. Thus there were only seven subjects whose problems were fixed to only one area. The observations derived from the investigation are in close agreement with the studies which have been conducted by Pierce (1960), Jamur (1961), Bahaduri (1971), Menon (1973), Reddy (1973), Seetha (1975). Ganguly (1986). The findings are partly in line with

Bhatnagar (1976), Rai (1974), Hilderth (1966), Mehdi (1965), all these authors have emphasised motivational factors to be more concerned with poor achievement of bright under-achievers. In the present study low need achievement has been found to be third factor in pulling down the academic achievement of bright underachievers and the sick home background and poor study habits are the first and second respectively. In this way the hypothesis (Minor), "some non-cognitive factors are responsible for bright underachievement stands confirmed".

Conclusion

The review of inferences drawn on the basis of organised counselling sessions, have shown that the problems of bright underachievers is a real problem and needs remedial measures in schools at different grade levels. Underachievement of the bright students leads to the wastage of educational investment besides the limited percentage of talented students. Establishment of guidance and counselling bureaus in high and higher secondary schools is the earnest need of the day and more so in the light of new educational policy. Government and States must rise to the occasion and take into cognizance the need of individual counselling and group guidance programmes in schools. It needs mention that, like problem children in schools, the bright and the gifted students have problems of adjustment and underachievement which need the attention of parents, teachers and educational planners.

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Schedule of Reinforcement : A Learning Model for Mental Retardates

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and
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The problem of mental retardation amongst children in India is one of the most important areas that has received very scant attention from experts in medicine, psychology and sociology. It is reported that there are 2.3 per cent children in the country who suffer from the problem of retardation from cognitive, psycho-social and physical view point. A modest estimate reported by Nimbark (1976) states that there are about four million children who suffer from mental retardation, of these 95% could be rehabilitated through various medical and psychological treatments. But it is unfortunate that such treatments are not made available because of economic limitations and lack of social awareness among parents and those who address themselves to the welfare of children. It is pertinent to state observation of Bijou (1982) on the treatment facilities of mentally retarded, he states "Relatively less research has been devoted to modification of academic and personal social behaviour on the basis of changes in getting the learner's attention, giving instruction for performing the task.....".

In the present investigation the authors designed the present study on the basis of techniques in behaviour modification adopted by Bijou (1961, 1966, 1968, 1971, 1981) and his assoc-

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iates. The objectives of the present investigation were three-fold. Firstly, the purpose was to identify the children in the different schools who are mentally retarded but educable. In this context Heber's (1961) definition was adopted for the present study. The definition reads as, "Mental retardation refers to sub-average general intellectual functioning which originate during the developmental period and is associated with impairment in adaptive behaviour." On the basis of this definition, the identification was made according to intelligence and social adaptive behaviour. The operational definition of Intelligence is based on the test manual of Stanford-Binet intelligence Scale (1960 version). It states "that the test consisted of testing a combined functional activity which conceived intelligence to be the sum of the thought processes which are involved in mental adaptation." Social adaptability being the second criterion for identification of mentally retarded, Edger Doll's (1965) definition has been followed by the investigators as operational definition. It reads as ".....Each item is conceived as representing a general growth in social responsibility which is expressed in some detailed performance an overt expression of that responsibility."

Secondly, the investigators were interested in developing an intensive case history of each retarded subject so as to schedule various modification programmes of improvement for each subject. Krasner and Ullmann (1965) state that this technique includes "processes by which new or altered behaviour comes about a result of prior response." Lovitt (1970) is of the opinion that in behaviour modification individualised assessment and direct observation are dependable factors.

Thirdly the attempt was to see that the designed schedules and learning paradigms help the subject to improve on his base level performance in the field of academics, social interaction and cognitive behaviour. It is discouraging to see that there have not been studies in the field of mental retardation from the point of view of behaviour modification technique. Some of the studies which have been conducted in the western countries provide good insight in developing the models for the present investigation. The studies conducted by Bijou (1971, 1981, 1982), Barcey and Goulet (1965), Wolf (1965), O'Leary and Becker and Wesely (1967) are some of the

studies which have been considered for developing schedules of reinforcement for children who are mentally retarded and educable.

Procedure

Under the objectives which have been mentioned earlier, the investigators administered Cattell's Culture Fair Intelligence Test (1959) Scale 3, both form A and B to a sample of 1980 children, selected from the high and higher secondary schools for boys of Srinagar city. The subjects, within the age range of 14-16 years, were included in the study. On the basis of the test scores only those subjects were conducted for further investigation whose I.Q. scores were 55 points and below. This preliminary screening left the investigators with 411 subjects. These subjects were medically examined by a child specialist (paediatrician) so as to establish that children who were suffering from any ortho-psychiatric problem or genetic factors associated with their retardation were not included in the final phase of the study. The medical reports revealed that there were only 126 subjects who were free from any organic or physical defects and these were retarded because of psycho-social and poor academic atmosphere to which the children had been exposed. Next, the investigators administered S-B test (1960 version) in order to locate the problem of each subject. Besides the administration of S-B test, Edger Doll's (1965) Vineland Social Maturity Scale was used for understanding social adaptive problem of the subjects.

On the basis of classification of I.Q. scores as given by Terman and Merrill (1960) only such subjects were retained for in-depth study whose I.Q. ranged between 50-70 I.Q. points. The number of such subjects filtered down to 50. In an attempt at specifying the problem of retardation and its impact on scholastic performance and socially adaptive behaviour, the investigators developed two independent checklists, one for the parents of the subjects and second for the concerned teachers with whom the subject conferred in the school. This was done to magnify the areas in the family and the school where the subjects were feeling handicapped in one way or the other. The purpose behind the development of parent-comment and teacher-comment checklist was to develop modi-

fication schedules both in scholastic performance and socially adaptive behaviour as has been done by Baker (1973). The overall results of S-B test and VSMS followed by parent and teacher comment checklists enabled the investigators to confine their attention for developing schedules of reinforcement and learning paradigms in 13 areas of which four are in the areas of academics and intelligence and the remaining nine in socially adaptive behaviour. The areas in academics comprised (1) memory (2) perception (3) reasoning and (4) comprehension (general, mathematical and language); and the areas of social adaptability are (1) communication (2) aggression (3) Lack of cooperation (4) hygiene (5) disruptive behaviour (6) socialization and self-direction (7) shyness (8) temper tantrums and (9) truancy. Of the fifty subjects who were left for the final investigation, ten cases were observed to be suffering from impaired memory, six cases had difficulty in application of reasoning. There were eight cases who had difficulty in comprehension and seven cases had poor perceptual application. There were 11 subjects who had problems in different operations of calculations of mathematical reasoning and language. These very 50 subjects had different problems on the social adaptive side as well. Of these 50 subjects: ten cases had difficulty in communication. Two subjects were aggressive, three showed lack of cooperation and whereas one had problem of hygiene. There were two subjects who exhibited disruptive behaviour, and eight subjects were lacking in socialization and self-direction. There were two subjects with the problem of shyness, two with the problem of temper-tantrums and two with truancy.

Formation of Schedules of Reinforcement and Learning Paradigms

After reviewing the overall accumulated information of all the 50 subjects, reinforcement schedules and learning paradigms for each subject were developed after establishing baseline performance of each subject. These models involved a number of phases from entry behaviour to the terminal behaviour. Necessary changes were brought into schedules of behaviour modification wherever subjects resisted change in their entry behaviour. This pattern was followed on the basis of Bijou (1968, 71, 81); Wolf et al. (1964), O'Liery and

Becker (1967), Lovitt and Esveldt (1970), Yamaguchi (1972), Elexander and Apfel (1976). The investigators had to vary the reinforcers for a given consequence according to subjects individual choice. They had also to request the parents and teachers to cooperate and conduct the subject strictly in accordance with the suggestions. For example, a subject who was poor on mathematical comprehension was to be rewarded by teacher if the subject showed an improvement in his class room performance. Similarly, parents were also requested to acknowledge the improvement in socially adaptive behaviour in the subject by permitting him to play or go for cycling or any such token reward which could elevate the feeling of the child. The investigators visited the schools and families of the subjects at regular intervals for recording the changes in their entry behaviour. The learning material was presented in gradation as target behaviour envisaged was to be achieved within a period of 15 days subject to change according to the improvements observed. Reinforcement was withdrawn for six days and reinforcement was re-introduced to record the change if there was any decline in the achieved target. It is interesting to note that by and large the subjects had improved and were doing better in their academic performance and socially adaptive behaviour. The programme was terminated after having record the optimum success from each subject in the relevant area of the behaviour. All this is presented in the Table I.

TABLE I
Showing diagnostic scores of MRE (N=50) on CCFIT, S-B, VSMS and pre and post achievements with respect to academic and socially adaptive behaviour.

S. Case No.	No.	CCFIT	S-B	VSMS	AREAS				%age base line		%age target		The duration till expected terminal behaviour			
					A	S	A	S	A	S	A	S	A	S	A	S
1	2	3	4	5	6	7	8	9	10	11	12	13				
1.	98	52	63	88	Memory	×	15	×	100	×	15	×				
2.	100	55	61	81	Compre.	Commu.	20	20	90	100	24	22				
3.	101	47	62	90	Compre.	Coop.	5	10	60	100	18	20				
4.	104	47	61	83	Memory	Shyness	15	5	90	100	17	17				
5.	110	52	64	86	Compre.	Temper	5	10 per day	90	70	18	20				
6.	125	55	70	90	Addition	×	10	×	100	×	22	×				

1	2	3	4	5	6	7	8	9	10	11	12	13
7.	265	50	57	82	×	Soci.	Avoids	×	90	×	24	24
8.	273	50	64	80	Memory	Truancy	15	Left	92	65	17	17
9.	287	55	61	87	Add.	Hygien	5	10	90	100	22	26
10.	302	45	60	82	Percep.	Comm.	10	10	90	90	20	20
11.	306	50	61	87	Unitary	×	15	×	100	×	20	×
12.	312	50	62	90	Reasoning	×	5	×	100	×	15	×
13.	320	55	62	90	Unitary	×	10	×	100	×	18	×
14.	327	55	61	85	Memory	Commu.	15	20	75	90	20	15
15.	330	50	55	90	Percep.	Socil.	5	3	100	100	20	20
16.	558	42	65	81	Unitary	Comm.	10	10	100	100	22	22
17.	559	55	58	81	Compre.	Socil.	5	5	45	100	20	15
18.	566	50	66	89	Memory	×	5	×	10	×	23	×
19.	575	55	57	81	Percep.	Coopera.	5	10	100	100	20	20
20.	601	45	55	88	Percep.	Social	5	5	100	100	17	13
21.	647	42	53	90	Percep.	×	10	×	10	×	28	×

1	2	3	4	5	6	7	8	9	10	11	12	13
22. 731	42	42	63	89	Subta.	×	5	×	100	×	17	×
23. 732	45	45	69	87	×	Disruptive	×	30	×	100	×	22
24. 735	42	42	60	85	Reason	×	5	×	100	×	17	×
25. 755	45	45	61	82	×	Aggre.	×	23	×	100	×	20
26. 784	40	40	50	81	Memory	Socia.	10	5	100	100	22	22
27. 806	45	45	53	86	Substra	×	15	×	100	×	17	×
28. 809	42	42	51	88	Reasoning	×	5	×	5	×	40	×
29. 827	45	45	58	82	Memory	Comm.	15	10	20	40	20	20
30. 872	42	42	57	81	×	Shyness	×	Not	×	100	×	17
								willing				
31. 887	42	42	52	84	Voc. weak	Comm.	5	5	100	100	20	20
32. 894	45	45	57	86	Weak Exp.	×	10	×	100	×	22	×
33. 898	52	52	59	88	Compreh.	×	15	×	100	×	17	×
34. 967	42	42	59	83	Compre.	Trau.	5	5	100	95	22	26
35. 1065	45	45	66	84	×	Socil.	×	Not	×	95	×	20
												Compreh.

1	2	3	4	5	6	7	8	9	10	11	12	13
36. 1073	45	45	70	89	Add.	×	15	×	100	×	13	×
37. 1087	45	45	63	86	Memory	Comm.	5	5	90	95	18	13
38. 1115	45	45	64	81	×	Aggress	×	25 Per	×	100	×	18
								day				
39. 1118	45	45	65	88	Reasoning	Coopera.	10	10	100	100	22	22
40. 1281	42	42	58	82	Compre.	Social	10	5	100	100	22	22
41. 1397	42	42	64	81	Reasoning	Comm.	5	10	100	100	18	18
42. 1437	42	42	63	88	Reasoning	Social	10	10	100	100	17	17
43. 1484	45	45	63	82	×	Disrup	×	42.4	×	65	×	22
44. 1498	42	42	60	81	Memory	Temper	5	15	100	100	20	20
45. 1545	52	52	60	82	Percep.	Commun.	10	15	100	100	20	20
46. 1626	52	52	70	90	Percep.	×	10	×	95	×	20	×
47. 1626	52	52	70	90	Percep.	×	10	×	95	×	20	×
48. 1735	55	55	70	81	Percep.	×	comm.	×	20	100	×	15
49. 1991	54	54	65	89	Memory	×	50	×	×	100	×	25
50. 1945	55	55	59	90	Add. Subs	×	5	×	100	×	25	×

Discussion and Interpretation

It is quite interesting to note that about 82% (N=41) cases out of 50 cases who were conducted for the final improvement in academic and socially adaptive behaviour, demonstrated very encouraging trends. Out of these 50 cases, six subjects showed improvement but they did not reach the target behaviour. The three cases from academic skills and social adaptive behaviour were dropped because their achievement did not go beyond 5% from the learning material, though the duration of time was extended, for these subjects, to 30 days. It is also encouraging to find that 11 cases did not show any relapse in their achieved target behaviour after a rest pause of six days and withdrawal of reinforcement.

It needs mention that there are no special institutions for mentally retarded in the valley and any child admitted in the school is to be promoted irrespective of his performance till he reaches towards terminal examination in higher secondary or high school examination.

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Pre- and Post-Vasectomy Behavioural Study of Albino Rats

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Vasectomy, as a surgical device for population control, has been fairly successful in our country and most of the ill-founded doubts and apprehensions regarding the after effects of Vasectomy stand rejected. Further, it is fairly established that Vasectomy, among males, for population control is quite successful and effective as well. Not only that, keeping in view, the millions of our countrymen, of whom majority are poor, illiterate and are living in far off villages, where the impact of mass-media has not made much success, vasectomy compared to condoms and pills is the most convenient and economically suitable device. Apart from the recurring financial involvement, the motivation for use of contraceptives among the illiterate masses is very poor besides illogical (Kapoor, 1968). Johnson (1964) has also observed that use of contraceptives does not permit the natural flow of emotions in copulation.

Although the apprehensions, like bad after effects of vasectomy have been medically disproved yet the psychological fear and the auto-suggestions leading to such fears have not been completely dispelled and are debatable. Obviously the prospective candidates who intend to go for vasectomy operations and those who have already undergone the operation, nurse a host of doubts and imaginary beliefs regarding the complications which stem from such operations. More so the illiterate rural masses reel under different imaginations like perpetual head-aches, back-pain, impotency, loss of vitality

and stamina. In this direction studies which have been conducted in India by Lakhtakia (1959), Kapoor (1968) and Wig (1971) from physiological, psychological and psychiatric view points respectively, have come out with different observations. Kapoor's study has revealed that there was a remarkable change in the psycho-social behaviour of his subjects because of the vasectomy operation. Kapoor further states that pronounced streak of emotionality and neuroticism was observed in the post-vasectomy behaviour of the subjects. In the same view, Lakhtakia established that four out of his hundred subjects had developed pyrexia and seven cases had developed infections, but no psychological disturbance in the behaviour of the subjects was found in the post-vasectomy behaviour. The study of Wig (1971) revealed, that a large number of vasectomised subjects reported emotional disturbance and fears like impotency.

The dynamics of human behaviour which is contingent upon dependent and independent variables can not be ascribed to a single factor X or Y, unless a number of observable and operationally definable variables, are taken into account. Therefore, it can be safely stated that the above mentioned observations made by Lakhtakia, Kapoor and Wig may not be directly because of the vasectomy but due to the psychological attitude of the subjects, who had undergone vasectomy operations. Therefore one has to take into account the social phenomena in which vasectomised person reacts to his psychological fears and is being intrigued with ill-founded beliefs.

In order to sift the grain from the chaff physiologists have, time and again, taken to the study of animal behaviour and have generalised their inferences on human species. Similarly, behavioural psychologists have also studied animal behaviour and interpreted the observations in the light of common biological characteristics among the human animal species (Reese, 1964).

Purpose of the study

It is an admitted fact that animals are not amenable to experiences like rumours, propaganda and such social distortions. Accordingly, the investigators in the present study considered to study the pre and post vasectomy behaviour of Albino Rats, so that differences if any, in the pre and post

vasectomy behaviour, could be singled out without diluting other intervening variables. The purpose in selecting the rats was two fold. Firstly, it was desired to know if the findings on rats can be generalised with the pre and post vasectomy behaviour of human subjects? Secondly by controlling the behaviour among rats, the impact of independent variable (vasectomy) could be singularly observed as a determinant of change in the behaviour of the animals. Needless to say that such a type of control and observation among human subjects is not practicable, because of the manifestations of illogical beliefs and fears. While reviewing the literature on the pre and post vasectomy behaviour, the investigators observed that factors like emotional disturbance, tendency towards neuroticism have been commonly reported. No study, available in the field has looked into learning impairment in the post-vasectomy behaviour among human or animal subjects. There are also contradictions in the findings of Johnson, Wig and Kapoor, on the one hand and Lakhtakia, on the other. Keeping in view, the findings of these studies the investigators in the present study formulated a number of null hypotheses for investigation. These include :

1. That there is no relationship between vasectomy and emotionality (the idea here is that a vasectomised subject (rat) does not become more emotional compared to pre-operation emotional behaviour).
2. That vasectomy does not effect the Dominance/submission of the subjects (rats).
3. Vasectomy does not impair the learning capability of the subjects (rats).
4. That vasectomy does not show any significant effect on the sex drive of the subject (rats).

These guidelines for present study were considered necessary so that the variables in question be operationally defined in order to arrive at a scientific and objective conclusions.

1. Emotionality

"Emotionality in animals has been considered as an analogous of neuroticism in humans" (Eysenck). Emotionality, according to Eysenck has been defined as :

"An inherited predisposition of the autonomic nervous system to react particularly, strongly, quickly and lastingly to certain classes of stimuli".

2. *Dominance/Submission*

The concept of dominance/submission in the present study refers to the displacement of one animal from a food supply by another animal as adopted by Collias (1964).

3. *Learning*

Learning in the present investigation has been defined as the sharpness of the animal to acquire food or water in a situation which is analogous to his pre-vasectomy experience.

4. *Sex Drives*

Sex drive in the study means the attempt of the male rat over the female (while in heat) with successful copulation or rides.

Procedure

For precision and objectivity various experimental designs were examined and only such designs were taken into consideration as had been widely used by comparative psychologists. The survey of literature provided the information regarding the variables which were taken for investigation in the present study. Attempt was made to make use of such procedures, as regards tools and techniques, which have been commonly adopted by psychologists and physiologists. It needs mention that the present study was completed in two phases i.e. Pre- and Post-Vasectomy observations.

Tools and Apparatuses

Although the exact apparatuses with high precision and mechanical counters were not available, an improvised design of the apparatuses, which did not impair the experimental precision, were designed in the Laboratory itself. It will be worthwhile to make a description of the apparatuses which were used in the present study.

Hall's Open Field Test

For the study of emotionality, animal psychologists like Hall (1934) and Broadhurst (1958) have used a standard criterion, for the defecation, ambulation and urination as the indicators of emotionality in rat. It will be pertinent to reproduce the statement of Eysenck (1969) related to the study of emotionality in rat.

"Defecation has been widely used as an expression of emotional responsiveness in small rodents and there is a good deal of evidence for the validity of this measure." (Eysenck, p. 286).

Open field test for the study of emotionality has been devised by (Hall, 1934). The apparatus comprises a plywood arena 32 $\frac{3}{4}$ " in diameter with white painted walls 12 $\frac{1}{2}$ " high. It is directly placed on floor which frames its base. The base is marked with three concentric circles divided into segments by lines radiating from the Centre. The segments are equally demarcated so that the ambulations of the animal from segment to segment can be measured and changed into total distance covered from any direction. A hundred candle bulb and an electric bell (12 volt) is attached with the apparatus for creating a stressful situation. Apart from the ambulations of the animal in the apparatus, the number of defecations and urination is also considered. The authors state that rats with high emotionality are prone to high degree of defecation and urination compared to the low-emotional rats. As regards the ambulation of the emotional rats, they exhibit a freezing and sluggish attitude under stressful situation.

Dominance/Submission Test

It is intended here, that the rats high/low in dominance be classified for the purposes of pre- and post-vasectomy behaviour under the same variable (Dominance/Submission). The study of this variable has also been conducted by Hall. The apparatus used by the author was a plain table where two hungry rats were exposed to a bit of food with a view to study the dominant attitude of the rat over a bit of food. Thus the

animal who dominated in grabbing was labelled as dominant and the one who surrendered was considered to be submissive one.

Learning

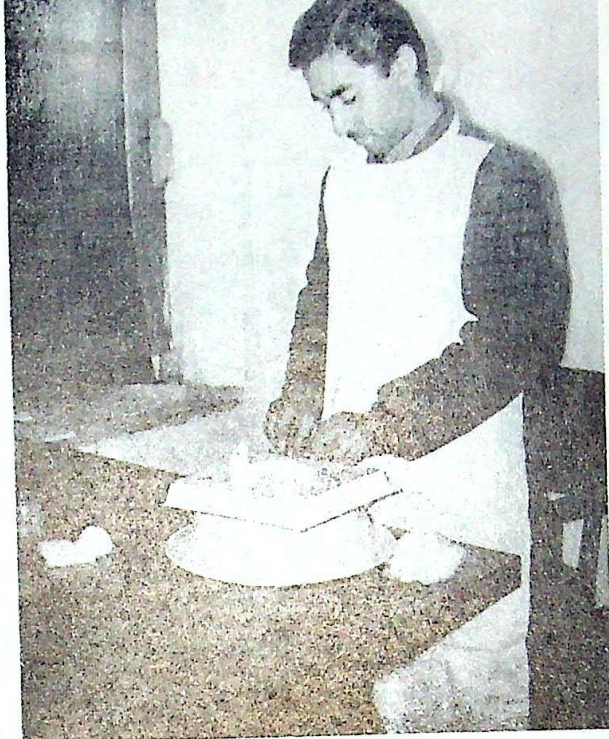
The experiments on learning have time and again been conducted on both human and animal subjects. The whole comparative psychology comprises such researches which are related to learning and remembering. Among the behaviourists Watson, Lashley, Liddle and Skinner have conducted a host of experiments which are based on the study of learning, motivation and conditioning. Skinner's study on rats is a widely acknowledged procedure for the study of learning. The author has used a simple card board box in which a hungry or thirsty rat operates on some levers so as to acquire food or water. In the present study, the same procedure was adopted for the study of learning among rats.

A card-board box of 18" x 12" one foot high, was designed for this study. From the one side of the breadth of this box, a tubular tin plate was inserted at a height of one inch from the floor of the box. Outside the box was a water bottle which was connected through a rubber pipe with the tubular tin plate. The design of the operation was such that any pressure on the tubular pipe would automatically bring down a drop of water on the grove of the tin plate. Thus, the behaviour of animal with regard to learning could be determined by the number of lever pressings.

Sex Drive

Sex drive among rats has variously been studied by Fred, Japson and Robert (1951). These authors have placed the female rat on heat with a 0.25 cc. of Estrogen and Progesterone. After two hours of the injection, a male rat was put into the experimental box with the female in heat. The number of rides and copulations were counted as the drive strength of the male rat. A photograph of injecting the female rat is shown on the opposite page.





Procedure : (Pre-Vasectomy Phase)

In the present study, the investigators adopted the same procedure as has been stated in the foregoing pages. After a complete analysis of the variables and the apparatuses designed to study the variables, the investigators operated on the present research on the following lines.

A sample of 12 albino rats, whose age ranged from 55 to 65 days was selected for the present study. These animals were purchased from the standard animal laboratory at Amritsar. For the identification of the animals, ear punching was made according to the Modesly Hospital procedure.

1. *Emotionality*

For the study of Emotionality (under pre-vasectomy conditions) each rat was placed into the open field test for five minutes in a day, for ten days. The behaviour of the rat with regard to ambulation and defecation was studied under this design. Immediately after the rat was placed in the open field test, a 100 volt bulb and a 12 volt buzzer was put on for creating a stressful situation. The total score of each rat, for ten days was computed and arranged in the tabulation form as shown in Table-I. A photograph of the rat in Hall's open field test is shown on the opposite page.

2. *Dominance/Submission*

For the study of Dominance/Submission, the subjects (12 in number) were kept hungry for 20 hours and two rats on the basis of their serial number, were put on a plain table with a single food pellet. The one who would dominate and grab the pellet of food, was considered to be the dominant one. The dominant one was exposed to other rats serially and the rats who emerged dominant from all combinations were labelled to be dominant.

3. *Learning*

In learning experiment, the rats were kept thirsty for 20 hours and were serially placed into the designed apparatus for 5 minutes duration each day. The total score of the 12 rats for 10 days has been given in Table-III. The number

of lever pressings within five minutes was considered to be the total score of the rat for that specified time.

4. Sex Drive

For the study of this variable, the males were segregated from the females for 7 days before the experiment started. A number of 5 females (within age range of 55 to 66 days) was administered a 0.25 cc. Estrogen Progesterone through muscular injection. The injection was administered just near the upper portion of the females right thigh. After two hours of injection, a male rat was introduced to a female in a closed Skinner box and the observer watched the behaviour of the male through a one way screen. Each male rat was placed with a female for 5 minutes duration and the number of rides and successful copulations were considered to be the total score for the sex drive of each male rat. The experiment was repeated for ten days with 5 minutes duration for each observation. The females were replaced after every 3 observations. The total score of sex drive for the total male rats for ten days is shown in Table-IV.

Vasectomy Operation

The operation of vasectomy, no doubt a highly technical operation, has become quite popular among the Surgeon's and other experts who deal with this discipline. It is very much pertinent to cite Lakhatakia's report on vasectomy who has very precisely detailed the techniques and complications involved in vasectomy.

"It does not imply that vasectomy should be done by specialists alone. To achieve any material results in family planning, the general practitioner has to play a vital role but whosoever performed the operation must, in the first instance do the operation under guidance and learn to recognise the vas by feel and sight."
 "(Lakhatakia, 1959, pp. 194-196).

The author in the same vein states :

"The vas is a long structure and can be legatured either in the scrotum or in the inguinal canal near the exter-

nal abdominal ring. Commonly the vas is explored low in the scrotum as the cord is mobile in this situation and can be easily pulled out of small incision. The part is prepared as far any other operation. The skin is sterilized with any non-irritant antiseptic. Spirit or iodine is not used. "(Lakhatakia, 1959, pp. 194-196.)

The present investigators took a number of lectures and watched a series of practical demonstrations in the Medical College under Dr. M.L. Koul. The Senior author who has also acquainted himself with such operations at the Post-graduate Institute of Medical Research, Chandigarh, performed the vasectomy operation.

In the present study a male rat was de-sensitized by placing the rat into a glass jar that was stuffed with Ether. After the rat was senseless, it was taken out from the jar and placed on the dissection tray with his abdomen upwards. A photograph of this operation is given on the opposite page. Before performing the operation, it was checked that the heart beats of the rat were normal. An incision half inch long from the left side of the groin was made and with the help of Ellis's forceps, the vas covered with the blood arteries and muscles, was slightly pulled out. After identifying the vas and separating it from other tissues, it was ligated from both ends. The wound was closed with catgut stitches. The operation was repeated from the right groin of rat thus making the operation of vasectomy complete and satisfactory.

Post-Vasectomy Phase

The experiments regarding the study of behaviour of the vasectomised rats were repeated after seven days of the operation. The experiments with regard to the variables under investigation viz. (Emotionality, Dominance/Submission, learning and sex drive) were repeated under controlled conditions as mentioned in the first phase.

STATISTICAL ANALYSIS

In the present study, investigators had a small sample for the observation of various characteristics. Care

was taken to select such statistical techniques as would be suitable for the present sample. "Distribution-free" statistics was considered to be an appropriate technique for the treatment of the data. From this method, the "Sign-Rank Test of Differences", that has been suggested by Wilcoxon (1956), was used in the present data. This method is useful and simple for smaller samples. Also the assumption involved in the test is mutual independence of the difference. Nothing is assumed with regard to the shape of distribution.

The Sign-Rank Test of Differences

In this method paired observations on the same sample are needed and the differences or changes, are ranked according to the absolute size as suggested by Wilcoxon. The numerical differences in the pairs with their algebraic signs, are listed separately and the smallest difference is given the rank of one. Zero differences are deleted. Next the differences with the minority signs, are singled out. The ranks of the singled out differences are being summed up which gives the T.

Emotionality

In the area of Emotionality, as shown in Tables I, IA, IB, i.e., ambulation, defecation and urination respectively, the pre- and post-vasectomy scores were paired together for the treatment of sign-rank differences test. The T for each sub-area has been shown in the respective Tables. The degree of significance of the T's has been checked from the Wilcoxon's Table.

TABLE I

Pre- and Post-Vasectomy Behaviour in Emotionality (Ambulation)

Rat No.	Distance Pre-vasectomy score	Distance post-vasectomy score	Difference in pre- and post-score post-score	Rank of absolute differences	Rank with minority signs
1.	275	263	+12	+6.5	.....
2.	319	311	+ 8	+2	.....
3.	451	440	+11	+4.5	.....
4.	396	377	+19	+9.5	.....
5.	264	256	+8	+2	.....
6.	506	495	+11	+4.5	.....
7.	473	448	+25	+11	.....
8.	418	406	+12	+6.5	.....
9.	308	293	+15	+6	.....
10.	352	344	+8	+2	.....
11.	264	245	+19	+9.5	.....
12.	462	432	+30	+12	.....

Mean=374.00 Mean=359.17 T=0 Not significant
S.D.=250.7 S.D.=250.3 (N=12)

TABLE IA

Pre- and Post-Vasectomy Behaviour in Emotionality
(Defecation)

Rat No.	Pre-vasectomy score	Post-vasectomy score	Difference in pre- and Post-score	Rank of absolute difference	Rank with minority signs
1.	8	7	+1	+1.5	.....
2.	9	7	+2	+3.5	.....
3.	17	12	+5	+7	.....
4.	16	14	+2	+3.5	.....
5.	12	12	0	.....	.....
6.	30	23	+7	+8.5	.....
7.	17	14	+3	+5	.....
8.	14	15	-1	-1.5	-1.5
9.	20	12	+8	+10	.....
10.	24	17	+7	+8.5	.....
11.	9	9	0	.....	.....
12.	11	7	+4	+6	.....

Mean=5.58 Mean=12.41 T=1.5
S.D.=6.4 S.D.=4.5 (N=10) Not significant

TABLE IB

Pre- and Post-Vasectomy Behaviour in Emotionality
(Urination)

Rat No.	Pre-vasectomy score	Post-vasectomy score	Difference in pre- and post-score	Rank of absolute difference	Rank with minority signs
1.	3	3	0	.....	.....
2.	5	4	+1	+3.5	.....
3.	3	2	+1	+3.5	.....
4.	3	4	-1	-3.5	-3.5
5.	5	2	+3	+10	.....
6.	2	3	-1	-3.5	-3.5
7.	4	5	-1	-3.5	-3.5
8.	2	2	0	.....	.....
9.	3	1	+2	+8	.....
10.	5	3	+2	+8	.....
11.	3	1	+2	+8	.....
12.	4	3	+1	+3.5	.....

Mean=3.50 Mean=2.75 T=10.5
S.D.=1.15 S.D.=1.19 (N=10) Significant

Dominance/Submission

The scores on dominance/submission of the 12 subjects were also paired together under the pre- and post-vasectomy observations. After the application of Wilcoxon's sign-rank test of differences, as shown in Table-II, the T was found to be 5 which is not significant at one per cent level.

TABLE II

**Pre- and Post-Vasectomy Behaviour in Dominance/
Submission**

Rat No.	Pre-vasec- tomy score	Post-vasec- tomy score	Difference in pre- and post-score	Rank of absolute Diffe- rences	Ranks with minority signs
1.	7	5	+2	+2.5	.....
2.	6	2	+4	+8	.....
3.	9	11	-2	-2.5	-2.5
4.	23	15	+8	+12	.....
5.	7	2	+5	+9.5	.....
6.	25	22	+3	+6	.....
7.	5	3	+2	+2.5	.....
8.	5	7	-2	-2.5	-2.5
9.	17	14	+3	+6	.....
10.	9	4	+5	+9.5	.....
11.	8	5	+3	+6	.....
12.	27	21	+6	+11	.....

Mean=12.33 Mean=9.25 T=5 Not significant
S.D.= 7.9 S.D.=6.9 (N=12)

Learning

Similarly the scores on learning under pre- and post-vasectomy observation, were also analysed through the Wilcoxon's sign-rank test of differences.

TABLE III

Pre- and Post-Vasectomy Behaviour in Learning

Rat No.	Pre-vasec- tomy score	Post-vasec- tomy score	Difference in pre- and post-score	Rank of Absolute diffe- rence	Ranks with mino- rity signs
1.	57	39	+18	+11	.....
2.	51	41	+10	+3.5	.....
3.	77	59	+18	+11	.....
4.	75	61	+14	+6.5	.....
5.	69	59	+10	+3.5	.....
6.	87	72	+15	+8	.....
7.	97	79	+18	+11	.....
8.	68	72	-4	-2	-2
9.	79	68	+11	+5	.....
10.	63	65	-2	-1	-1
11.	57	43	+14	+6.5	.....
12.	90	73	+17	+9	.....

Mean=72.50 Mean=60.92 T=3 Not significant
S.D.=13.7 S.D.=12.8 (N=12)

Sex Drive

In the same manner, the scores on sex-drive under pre- and post-vasectomy observation were also analysed through the Wilcoxon's sign-rank test of differences. The $T=8.5$, was found to be significant at one per cent level.

TABLE IV

Pre- and Post-Vasectomy Behaviour in Sex Drive

Rat No.	Pre-vasectomy test	Post-vasectomy score	Difference in pre- and post-score	Rank of absolute differences	Ranks with minority signs.
1.	20	15	+5	+5.5	.....
2.	14	12	+2	+1	.....
3.	26	15	+11	+12	.....
4.	19	26	-7	-8.5	-8.5
5.	14	10	+4	+3	.....
6.	28	19	+9	+10.5	.....
7.	29	23	+6	+7	.....
8.	20	16	+4	+3	.....
9.	25	18	+7	+8.5	.....
10.	21	16	+5	+5.5
11.	15	11	+4	+3
12.	33	24	+9	+10.5

Mean=22.00
S.D.=5.9

Mean=17.08
S.D.=4.9

$T=8.5$ significant
($N=12$)

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DISCUSSION AND INTERPRETATION

The motives in the study of comparative psychology have been two-fold. The first one is to explore the study of science and physiology, related to the animals and, the other one is related to the discovery of principles which are considered to be useful in understanding the physiological and biological aspects of human beings. Darwin's theory, though an anecdotal survey of comparative study, is the forerunner of the modern research in comparative psychology and biology. The volume of research, that has accumulated for the last fifty years in the field of learning, emotionality, and the basic drives, is in itself a reinforcing incentive for exploring the nature of man via animal research. Extension of animal research in psychological laboratories is a growing phenomenon in psychological research. Contributions, with regard to comparative research in psychology, from Pavlov, Watson, Kohlar and to Skinner. Eysenck is one of the pioneers who has anormously contributed to the research in comparative psychology. His experiments on rats, monkeys and children, have revealed a great wealth of knowledge that helps in understanding the nature and operations of animal and human subjects in learning and social behaviour. Apart from the study of comparative behaviour of animal and human subjects on earth, it has also helped in the modern space research.

The references cited in the foregoing pages, beyond doubt, support the research in comparative psychology in order to enrich man's knowledge about his nature. In the present research, the investigators designed the study of vasectomy on rats with a view to observe certain behavioural changes in the subjects. The purpose, here, was to infer if such changes can take place among human subjects who undergo the vasectomy operation. It is beyond doubt that people with emotional instability and weak ego will host innumerable doubts about vasectomy. This has also been established by Kapoor (1968) and Lakhatakia (1959). Since the present research has been limited to the study of emotionality, learning, dominance/submission and sex behaviour, before and after vasectomy operation, the interpretation of the results has been confined to these variables.

Emotionality

The first null-hypothesis in the present investigation relates to the emotional behaviour of the rats, before and after vasectomy. It has been stated in the hypothesis that "There is no relationship between vasectomy and emotionality". Examining the results of the pre- and post-vasectomy behaviour of the subjects in ambulation and urination, the following inferences are drawn,

According to Broadhurst (1958) the emotional rats, in the open field test, exhibit freezing behaviour and hesitancy. Thus emotionality is inversely related to ambulation. The results in this study reveal that there is no significant change in the emotional behaviour of the rat as regards ambulations in the open-field test. The Wilcoxon's $T=0$, is not significant. Hence the null hypothesis is plausible. Eysenck, in his studies, has advocated that inheritance plays an important role in determining responses to emotional situations i.e., the constitutional and glandular functions are the determinants of emotionality. Since our subjects did not show any significant change in emotional behaviour, it is inferred that vasectomy, as an operation, does not affect the emotional behaviour of the rats.

It has been mentioned in the beginning I, that human subjects, who undergo vasectomy operation, are exposed to make-believe talkes, related to hazards of vasectomy. The reaction to such beliefs and fears affects the normal emotional attitude of a vasectomised person, who in defence, exhibits such reactions, which are related to emotionality and stress. It is from this view point that the investigators attempted to study the emotional behaviour among vasectomised rats. The results of this research find support from Wig and Johnson.

Defecation is one more criterion on the basis of which emotionality among rats had been measured. The present findings do not show any significant differences in the pre- and post-vasectomy behaviour of the rats with regard to defecation. Wilcoxon's $T=1.5$, is not significant. Eysenck, in some of his studies, has considered visceral action as the determinants of emotionality. The present study also reveals that the visceral reactions bring some changes in emotional behaviour. As regards the study of faeces, the subjects revealed

a significant change in pre- and post-vasectomy, observations, Wilcoxon's $T=10.5$, $P<0.01$.

On the whole, the results of this study reveal that vasectomy does not interfere with the normal emotional behaviour of the rat. It could be inferred, from the present results that vasectomy among human subjects should not affect their normal emotional life. But cases who are prone to suggestion and fabricated beliefs will experience both psychological and surgical complications.

Dominance/Submission

The second null-hypothesis in the present research was, "that vasectomy does not affect the dominant/submissive behaviour of the rats". As shown in Table-II, the differences between the pre- and post-vasectomy behaviour are not significant (Wilcoxon's $T=5$). Hence the null-hypothesis is retained.

Though the degree of aggressive behaviour is determined by the constitutional types and endocrinology, the psychological state of an individual equally reacts on the body constitution and the glands. Studies which have been conducted by Gordon (1964), Mowrer (1964) and Potter (1964), have revealed that the degree of dominance hierarchy among animals depends on a host of factors like familiarity, body weight, endurance and endocrine balance. It is, therefore, confirmed that the results in the present study are in line with the references cited above. As regards the composition of sex glands, thyroid, cortex and gonads are the main constitutional determinants for sexual behaviour. It is argued that the severing of the vas affects the active behaviour of an organism and renders him sluggish and inactive. As for the vasectomy operation is concerned, the severing of the vas does not impair the glandular functions except that the semen that comes from the testies does not carry the live sperms. Hence there is no loss of secretion which regulate the temperament and active behaviour of an organism. These findings have also been confirmed by Lakhatakia and Johnson in their studies on human subjects. The dominant subjects in our study continued to be dominant after the vasectomy operation also and the submissive ones equally continued to be submissive during the post-vasectomy experiment.

If the results of this research are generalised 'on the human subjects', it is evident that suggestions, rumours and morbid fears are some of the sources which generate various changes among those who have consummated vasectomy. A weak ego which is very much receptive to such distortions and beliefs as are ill founded, falls an easy prey to a host of doubts which bring a change in his psychological and physiological behaviour. Hence it may not be unscientific to state that vasectomy does not render the previously normal subjects (humans) sluggish, lazy and submissive. Johnson, in his study, has also revealed that vasectomy does not bring any change in the body physiology of a subject. But those subjects who are prone to doubts and are vacillating in their decisions, experience certain psychological and physiological changes after post vasectomy. This evidence confirms that the psychological fears, associated with the vasectomy operation, are the sources which bring change in the body physiology of those who have undergone the operation. It is worthwhile to support our results with the findings of Wig who states that persons who are emotionally unstable and lack proper health education are prone to complain some psychological and physiological ailments after the vasectomy operation.

Learning

Experiments in learning on animals have exercised the attention of psychologists as early as 1903, when Pavlov revealed the learning mechanisms in dogs. After Pavlov, other psychologists, like Thorndike, Watson and Skinner established a host of theories on learning which emanated from animal experiments. It is, therefore, doubtless that the mechanisms applied in animal learning are also applicable to human subjects as regards learning experiments.

It was one of the main concern of the investigator to confirm empirically whether vasectomy impairs the learning capability of rats. The null hypothesis for this variable suggested that, "Vasectomy does not impair the learning capability of the subjects (rats).*" The pre- and post-vasectomy observations in this area have not revealed any significant difference as the Wilcoxon's sign-rank test, shown in Table-III ($T=3$), is not significant. Hence the hypothesis is

plausible and it is established that vasectomy does not interfere with the learning potentiality of rats.

Operations on the brain of an animal or a human subject have revealed loss of capability for learning. These experiments include brain lesions, removal of a portion of cortex and frontal lobotomy. These have been confirmed by Marquis (1934) and Maier (1932). Since the difference in the learning behaviour of rats before and after the vasectomy operation are not significant, it is established that the ligation of the vas does not interfere with learning and remembering. To apply the results on the human subjects, it is believed on the basis of present evidence that there should not be any impairment in learning and remembering of the vasectomised male subjects. Kapoor in his study on vasectomised subjects (humans), has not shown any change in the learning capability in his sample. However, it would be worthwhile to extend such an investigation on those human subjects who have undergone the vasectomy operation. But it is definite that the individual differences such as a weak ego, emotional instability and vacillating moods will interfere with the psychological life of a vasectomised person.

Sex Drive

Sexual potency is one of the pivotal problems that stems from the vasectomy operation. Since the operation affects the reproduction system, people with inadequate sex education associate a host of unfounded beliefs to vasectomy operation. It is widely rumoured that the operation leads to impotency, celibacy and such other behavioural syndromes which interfere with the marital life of couples. The review of literature, related to this topic, does not show such complications as the concomitant factors of the operation. Johnson, Kapoor, Wig and Lakhatakia, have established their findings from the surgical, psychiatric and neurological view-point, that vasectomy as an operation does not interfere with the normal sexual life. However, the operation being irreversible, it leads to certain hypochondriacal symptoms which are actually based on hearsay, beliefs and suggestions.

In the present research, the vasectomy operation on rats, revealed a significant difference between the pre- and post-vasectomy behaviour, Wilcoxon's $T=8.5$, $P<.01$. The sexual

behaviour in the present research has been operationally defined as the number of successful rides made by the male rat on the female. It was not possible to register as accurately as possible, the rides and the successful copulations of the male rat. Hence, it is possible that the degree of significance as shown in the results, might have been due to the interference of subjective element in recording the observations. However, on the basis of the data, the null hypothesis is rejected.

Implications of the Present Study

It was intended that this research on rats will help in throwing some light on the post-vasectomy behaviour of human subjects. Needless to say that comparative psychology has time and again helped in understanding the physiological, psychological, and pharmacological implications of various drugs and the glandular secretions on man and animal. With such studies in view, the investigators attempted to apply the investigations of this research on human population. Vasectomy which is the only suitable device for population control, in India, does not interfere with the normal psychological and physiological behaviour of a man. Taking into consideration the precision and the nature of operation, it should not create any surgical complications unless the process of operation has damaged any other tissue. As the nature of individual differences has since long been established, among human and animal subjects, it is pertinent to say that persons with psychoneurotic tendencies, emotional instability and proneness to suggestion should not undergo this operation.

CONCLUSION

The results of the present research have led to the following conclusions and suggestions,

Conclusions

1. That vasectomy operation does not disrupt the normal psycho-social behaviour of the rats.
2. The operation is so simple and free from complications that it will be the only convenient and successful device for population control. Before undertaking the opera-

tion, it is of utmost importance to study the nature and constitution of vas and its associated tissues. In some studies as cited by Lakhatakia and Johnson, it has been found that the patients who had developed post-operation complications, had not been operated properly.

3. The comparative study of the human and animal subjects reveals that it is very important to consider individual differences and mental state of those who undergo vasectomy. Human beings with neurotic tendencies, emotional disturbances and proneness to suggestions, may not prove to be good clients. It is also important that the prospective candidates (human beings) be educated about the nature and the results of the operation. For instance, it is necessary to educate the clients that the operation is irreversible and it is also possible that the vasectomised subjects may bring forth children because of the failure of operation (wrong diagnosis of the vas).

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Predicting Delinquency Among Adolescents

Dr. M.L. Lidhoo

Introduction

There has been a phenomenal increase in the deviancy among adolescents all over the world and this increase is associated with a host of factors like industrialisation, swelling population, absence of parents from home and loss of moral and ethical values. Even sociologists, like Durkheim (1948) and Merton (1957), support the argument that breakdown in social control due to anomic situation has led many a youth to conflicts and deviant roles. Merton further states that proportion of deviant behaviour reflects social deviation, of which juvenile delinquency is a conspicuous example. According to UNESCO report (1951), on juvenile vagrancy, United Nations Conference in (1960), and the joint Seminar of UNO/UNESCO (1960) on Delinquency in Asian countries, it is observed that juvenile delinquency, all over the world, has reached alarming proportions. The report of United Nations (1960), on juvenile crime in London, Wales, South Africa, Australia, East Germany, West Germany, France, Sweden and Finland have shown alarming increase in the spurt of crime among juveniles. In India alone the number of officially arrested juvenile delinquents for the year 1958 was 14,920. Though this statistics is only a fringe of the iceberg because most of the delinquent activities in the country are not officially recorded. According to Rao (1962), (P. 6), "A serious crime is committed in this country every minute and there is one criminal after every 1570 persons" (Census 1970).

In almost all the Western and European countries attempts have been made to predict potential delinquents among adolescents in Schools or in the neighbourhood, through various predictive tests, like K.D. Proneness Scale (1961), Gough and Peterson Socialization Scale (1952), Hathaway and McKinley (1951) MMPI, and Gluecks and Gluecks Delinquency Prediction Test (1959). In India no serious attempt seems to have been made towards the development of a psychologically, psychiatrically or socially oriented tool for the prediction of juvenile delinquency. Some attempts made by Shanmugam (1956), Ray (1963), Krishnan (1964) and Sandhu (1960) have tried to establish a delinquency prediction scale or criminal prediction scale but these scales have not been used widely.

Purpose of the Present Investigation

The present investigator, while reviewing the literature on the prediction studies, felt concerned regarding the non-availability of a tool which could help in predicting potential delinquents among school going children, who could be reclaimed towards the normal path before their long excursions on deviant roads. In this regard an attempt was made to conduct an intensive study of officially apprehended delinquents, for establishing the social, psychological, personal and family background of these adolescents. This was considered to be a vital source for development of a prediction tool on the basis of background conditions of delinquents who have been legally punished and incarcerated.

Procedure

Since the proposed study was intended to yield an objectively devised tool for prediction of delinquents, the investigator developed a phased programme that was spelt-out as : (i) preliminary investigations ; (ii) pilot study ; (iii) try-out study ; and (iv) final culmination of a prediction tool.

The preliminary investigation was conducted on 60 juvenile delinquents (officially declared) lodged in Central Jail, Tihar, New Delhi. This phase of the study was conducted with the help of a check-list developed for listing information of the institutionalized delinquents. The areas included in the check-list were, early childhood experiences,

school background, reasons of drop-outs, family background and other ancillary factors which had brought these subjects in the notice of law and were punished. The collected information was further cross-checked, with the available records of each subject with the social welfare office, stationed in the prison.

In the second phase of the study, an attempt was made to screen various prediction tools developed in Europe and America. Secondly, the information collected from 60 delinquents was pooled into a number of statements in the form of questionnaire. At this stage, the investigator considered to develop the statements in the four broad areas. These include (i) Family background ; (ii) Emotionality ; (iii) Sex; and (iv) Social Dependence/Independence. Family background has invariably been mentioned in all the predictive devices like that of Gluecks (1950) and Kvaraceus (1953). Further the 60 subjects under investigation in Tihar Jail have invariably expressed their unpleasant family conditions like poverty, psychologically/physically broken homes, and poor neighbourhood environment.

Emotionality as a factor was included on the basis of disturbed conditions of the subjects under investigation. This factor was also included because of the family affliction, as expressed by the subjects during interview. Sex deviancy as a factor was also included on the basis of first-hand information received from the subjects. This information included experience of the subjects in homosexuality, visits to red-light zones (as these places provided shelter to delinquents), eve-teasing and such anti-social activities which are associated with sex offences.

The concept of social dependence/independence, which has been developed as a special factor in the proposed study, is based on Dollard and Associates (1945) and Gluecks and Gluecks (1950). The authors believe, that delinquents irrespective of social norms, resort to direct intervention for immediate gains which is defined as social independence. On the other hand, non-delinquents whose behaviour is in accordance with social and ethical code, depend on parents and authority to earn recognition and do not resort to aggression, stubbornness and overt actions.

After the final consolidation of areas which were considered to be incorporated in the proposed tool, the investigator framed hundred statements in "Yes" and "No" form in all the four areas, i.e., Family background ; Emotionality ; Sex behaviour and Social dependence/independence. The format of the statements in the form of "Yes" and "No" was considered to be more precise as compared to multiple choice statements. This was also considered for the reasons that delinquents often evade reality in an open choice statement.

First Try-Out

In the first attempt the investigator administered the try-out test to 60 delinquents in Tihar Jail, Delhi and 60 non-delinquents who were selected from those areas of Delhi which represent high delinquency statistics. These areas include Gandhi Nagar, E. Krishan Nagar, Shahdara and Seelampur. The socio-economic conditions age and family conditions were controlled to the maximum extent. The inventory of four hundred statements was administered to non-delinquents who had been randomly selected from the Government High/Higher Secondary Schools from the areas mentioned above. The 60 non-delinquent subjects were conducted in two sittings and the test was administered in accordance with standard instructions. The 120 answer sheets of 60 delinquents and 60 non-delinquents were scored in keyed order by single difference score method which has been adopted from Kvaraceus (1953). A score of 'one' was assigned to 'yes' and 'zero' score to 'No'. The uniform weightage procedure, in the proposed inventory, was followed after Burgess and Associates (1928). As the purpose of the present inventory was to screen delinquency prone youngsters from the well socialised one. The scoring was done in terms of delinquency proneness and not in terms of social conformity. This is in accordance with Gough's (1952) socialization scale. This procedure has also been adopted by Sandhu (1968) for screening delinquents and non-delinquents.

Item analysis for each item, which could discriminate delinquent response from the non-delinquent response, was conducted on the basis of proportion of responses in the form of 'Yes' and 'No' given by delinquents, and non-delinquents.

Discrimination of the items was calculated by applying Phi-coefficient, and only such items were retained as were significant at one per cent level. This left the final inventory with 35 items in Family, 26 items in Dependence/independence, 28 items in Sex and 26 items in Emotionality, 115 items in all. The final inventory comprising of 115 items was designed in such a way that no two items of the same area followed successively, except for the last eight items which represent the area of family.

Final Administration

The final test named, "Lidhoo's Delinquency Proneness Scale", was administered to 200 institutionalised delinquents and 200 non-delinquents representing similar socio-economic, family and educational background. The non-delinquents were again selected from delinquency prone areas of Delhi. The test was administered individually on the institutionalised delinquents, and the non-delinquents, randomly selected from High and Higher Secondary Schools of Gandhi Nagar, Krishan Nagar, Shahdara and Seelampur. The average age of delinquents and non-delinquents was 17.5 year and 16.93 years respectively, as shown in Table I.

TABLE I

Age Distribution of 200 delinquents and 200 non-delinquents

Interval in years	Delinquents		Non-delinquents	
	Number	Per cent	Number	Per cent
14-15	42	21.0	48	24.0
15-16	46	23.0	67	33.5
16-17	58	29.0	52	26.0
17-18	28	14.0	21	10.5
18-19	26	13.0	12	6.0
Total	200	100.0	200	100.0
Mean	17.5			16.93
S.D.	±1.29			±1.36

Establishing Reliability

For establishing the reliability of the tool, the investigator has to consider certain limitations due to which the method of test, retest or parallel form was not possible, because the prison population keeps fluctuating and the controlling and administrative conditions, inside the prison, can not be kept constant. Lastly, the impact of incarceration and separation from relatives affects the inmates of prison. Owing to these limitations, the investigator adopted Kuder-Richardson Formula 20, for computation of reliability for each sub-scale, which provides the reliability score of the test on the basis of item correlation with the whole test. The Kuder-Richardson Formula 20, as given in Guilford (1954) reads as :

$$r_{tt} = \left(\frac{n}{n-1} \right) \left(\frac{\sigma^2_t - \Sigma p_i q_i}{\sigma^2_t} \right)$$

For the computation of the values, as given in the formula, the data of each sub-scale, for each item, were shuffled, such that in the rows, the number of individual cases were given from one to four hundred, and in the number columns the number of items were given from one to 'N'. In this way, responses of each individual were plotted against the items of each sub-scale. The total of 400 subjects (200 delinquents and 200 non-delinquents) from rows gave the total number of 'Yes' responses from each item, and from the column side the total responses of each individual for all the items provided the total score. With this data total variance (σ^2_t) and the summation of the ($\Sigma p_i q_i$) all the four sub-scales were calculated as shown in Table I.

TABLE II

Showing reliability coefficient of each sub-scale

Family	$r_{tt} = (35/34) \frac{(34.34 - 6.8003)}{34.34} = .824$
Dependence/ Independence	$r_{tt} = (26/25) \frac{(17.74 - 5.4558)}{17.74} = .719$
Sex	$r_{tt} = (28/27) \frac{(21.31 - 5.4515)}{21.31} = .771$
Emotionality	$r_{tt} = (26/25) \frac{(28.12 - 5.4859)}{28.12} = .836$

For the composite reliability of the inventory, Mosier's (1943) formula was adopted. This formula provides the reliability co-efficient of the whole test by applying the reliability co-efficients of the sub-scales included in the test. The formula as given by Guilford (1954, P. 393) reads as :

$$r_{ss} = 1 - \frac{\sum W_j^2 \sigma_j^2 - \sum W_j \sigma_j^2 r_{jj}}{\sum W_j \sigma_j^2 + 2 \sum W_j W_k \sigma_j \sigma_k r_{jk}}$$

where r_{ss} = reliability of a sum of components

W_j = Weight assigned to any component J

W_k = Weight assigned to any component K

σ_j, σ_k = SD's of components J and K respectively

r_{jj} = reliability coefficient for any components

r_{jk} = inter-correlation of components j and k.

The computed values for the above formula are shown in the Tables III and IV.

TABLE III

Standard Deviation summation of variance and the summation of the products of variances with corresponding Reliability coefficients

Sub-scales	S.D.	σ^2	r_{ii}	Product of σ^2 and r_{ii}
Family	5.89	34.34	.834	28.296
Dependence/Independence	4.21	17.74	.719	12.755
Sex	4.61	21.31	.771	16.430
Emotionality	5.31	28.12	.836	23.508
		<u>105.51</u>		<u>80.989</u>

TABLE IV

Twice the summation of inter-products of standard deviation multiplied with corresponding correlations

	S.D. Products	Correlation	Product
Family Dependence/Independence	24.296	.486	11.808
Family/Sex	27.152	.493	13.386
Family Emotionality	31.275	.554	17.326
Dependence/Independence	19.408	.637	12.362
Dependence/Emotionality	22.255	.437	9.769
Sex/Emotionality	24.479	.468	11.436
Twice the product.....			<u>152.214</u>

The values deduced from Table III and IV were applied in the formula and the total reliability of the test was computed as under :

$$r_{ss} = 1 - \frac{101.51 - 80.989}{101.51 + 152.214} = .919$$

With the above mentioned computations the reliability of the total test was found .919 which is fairly high.

Establishing Validity

Though there are different methods for establishing validity of a test, yet an objective and scientific way of establishing validity for a predictive tool can be only by prediction. Gluecks (1950) have also established predictive validity for apprehending potential delinquents. The investigator in the present study adopted for the following four tests for the establishment of validity: (i) A two year follow up study of extreme cases; (ii) Point bi-serial; (iii) Test of significance of the mean differences; and (iv) Correlation of the present test with teacher-comment check-list.

Follow-up method

Twenty high scorers whose scores ranged from 66 to 86, and seventeen low scorers whose scores ranged from 11 to 35, from the sample of non-delinquents (N=200), were watched for about two years. At the time of first administration, of the test, these subjects were in Class IX, X and XI. After two years when the follow-up study was resumed it was found that out of twenty high scorers, three had left the studies and three cases could not be traced as their parents' had shifted to other stations. Of the remaining fourteen cases five had been incarcerated for illicit distillation and the remaining were engaged in petty self-employment. On the other hand, the seventeen low scorers, despite their economic and social handicaps, were continuing their studies and had been doing well, in their performance. The information about the extreme cases was also cross-checked from teachers with the help of a special check list, developed by the investigator on the pattern of check-list designed by National Conference on Prevention and Control of Juvenile Delinquency (1947) in America.

Point Bi-serial

The use of point bi-serial is recommended by Gullford (1954, P. 301) in situations like colour blindness v/s normal colour vision and criminal v/s non-criminal. The pbi of 400 subjects viz. (200 institutionalised delinquents and 200 non-delinquents), was found to be .663 which is significantly high and supports the relationship between legal criterion and the present inventory.

Significance of mean difference

For the test of significance between the mean scores of delinquents and non-delinquents in the areas included in the present inventory, Fisher's 't' test was used and the differences were found to be significant beyond .01 level.

Means, S.D. and 't' of 200 delinquents and 200 non-delinquents in the sub-scales of L.D. Proneness scale

Sub-scale	Delinquents			Non-delinquents			't'
	N	Mean	S.D.	N	Mean	S.D.	
Family	200	17.86	4.02	200	10.18	4.84	17.4
Dependence	200	14.96	3.76	200	12.45	3.62	6.6
Independence	200	14.93	3.89	200	11.85	4.31	7.5
Sex	200	15.25	3.83	200	8.99	3.97	16.4
Emotionality	200	15.25	3.83	200	8.99	3.97	16.4

't' significant at one per cent.

Correlation of the test with Teacher Comment Check-list

As followed by Hathaway and Monachesi (1957), Kvaraceus (1961) and Conger and Miller (1966), the present investigator also adopted comments of teachers, which are related with the present Delinquency Proneness Scale. For this purpose the investigator administered the present test to sample of 117 School going subjects in Old Delhi Schools. These subjects had been randomly selected from IX, X and XI classes. Besides, the opinions of the teachers were recorded on a teacher comment-check list. The relationship between LD Proneness scores and Teacher Comment Check-list was found to be highly significant, $r=.821$.

For establishing mutual independence of sub-scales of the inventory partial correlations were worked out. These are shown in Table VI.

TABLE VI

Product moment correlation and partial correlations of the factors included in the LD Proneness Scale

Factors	Product moment correlations	Second order partial correlations
Family/Dependence Independence	.486	γ 12.34 .137
Family/Sex	.493	γ 13.24 .318
Family/Emotionality	.554	γ 14.23 .348
Dependence/Independence score	.637	γ 23.14 .478
Dependence/Emotionality	.437	γ 24.13 .391
Sex/Emotionality	.468	γ 34.12 .163

Although the investigator adopted various methods for establishing validity of the proposed Inventory yet it is difficult to say that the test is perfectly valid. Human nature as it is, can not be predicted with utmost perfection and this is equally true for any tool that measures personality characteristics. Briggs and Writ (1965) in the same vein have observed that not a single tool which measures delinquency is completely valid. To quote Gluecks (1959), the author states, "Although validation studies, very rare in the initial stages of prediction research are, in particular through the persistent efforts of the Gluecks, becoming more frequent, it can not be said that a perfect validation of any of the existing tables has so far been achieved". (P. 183).

After the completion of reliability and validity of the tool established on a sample of 200 institutionalised delinquents and 200 non-delinquents, the investigator conducted an intensive study of extreme cases (high/low scorers) from the non-delinquent sample and the results have shown that the subjects scoring 64.5 above, i.e., above the mean are seriously in need of counselling for their rehabilitation in School, family and social life. On the other hand subjects scoring 44.6 i.e., below the mean point are those who are docile, shy and socially conformists. The test has been used in a number of M. Phil and Doctoral studies and the results have all along shown consistency with the construct validity of the test.

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Crime and Deviancy an Analysis and Synthesis

Dr. M.L. Lidhoo

Psychology of criminal behaviour, which hitherto is a jigsaw puzzle, has baffled scholars, saints, mystics and the commoners alike. The chequered excursions of those who have engaged themselves to discover the riddle of crime and the criminal characteristics have come to a naught in their pursuit. Except for some sundry hopes that crime like mental and physical sickness will be controlled and the criminals rehabilitated as the useful citizens of the society. On the contrary crime has taken ghastly strides and bedeviled all who are relentlessly in search of the causal factors of this social evil.

Many theories and analogies have been built to explain the portrait of a criminal but one after the other have recorded to the archives of ancient history of Criminology. The fallen status of man, possession by devils and evil spirits all such beliefs have made many a noble life to go to gallows or perish in dehumanising dungeons. Not only that but the vestiges of such shameless and sordid thinking persist even now in the countries where the blessings of science and modern technology have yet to make a lasting impact.

The influence of Biology, heredity and Anatomy changed the pre-historic thinking about criminal personality and new dimensions from psychology and sociology emerged for the study and prevention of crime. Mendel's theory of genitics, Francis Galton's studies on nature and environment ushered a number of criminologists towards the biological, genetic and constitutional studies of criminals and their genealogy. Since

these were the maiden studies in crime causation, a host of new theories percolated from each discipline, and each theory presented the genesis of crime causation. Gall a Viennese physician was the first scientist to explain the roots of criminality in the phrenology of the criminal. The author felt that criminals compared to normals had bumps on their heads and their facial structure and jaws, and the structure of nose were different than the normal population. In the beginning the impact of the new theory was so convincing that even the father of psychology William James (1880) incorporated the phrenological conviction in Psychology and its impact on mind and the psyche of a person. But Gall's phrenology did not stay long in the face of growing impact of constitutional theory presented by Italian Physician Lombrose, who had studied criminals and the troublesome soldiers in the army. Lombrose (1911) not only believed but supported with empirical inferences that criminals in general have a slanting forehead, long ear lobes, large jaw with no chin excessive hairiness or abnormal absence of hair on the body. Lombroses' theory of born criminality was refuted tooth and nail by Goring a royal physician of the prisons in England. Goring studied more than three thousand criminals and an equal number of non-criminals. The findings revealed that there was not even the remotest relation between body constitution and incidence of criminality.

Notwithstanding the phenological and the constitutional theories, a set of new theories emerged from endocrinology by Hooton (1939), Personality typology by Sheldon (1940) and heredity theory by Lang (1929). In the light of growing scientific analysis of all the emerging theories it was established that crime cannot be associated to a single factor like endocrinology, heredity or personality typology. Besides the growing impact of Psychiatry, psychology and orthopsychiatry in the study of mind and behaviour, all other theories became outdated. Studies on the psychological behaviour of the criminals emphasised the study of social and other ameliorating factors which interfere with the behaviour and thinking of a person. Social psychology and sociology emerged as an additional dimensions of the study of criminals and their behaviour. The pioneers who contributed to sociological studies were influenced by the views of John Dewey, Geogo Mead,

Edwin Sutherland. The famous criminologist—sociologist Sutherland (1955) felt that criminal behaviour like anti-social behaviour is learnt in the social atmosphere prevailing around a person, the author states, "...When persons become criminal they do so because of contacts with criminal patterns and also because of isolation from anti-criminal patterns. Any person inevitably assimilates the surrounding culture unless other patterns are in conflict."

Sutherlands' theory of criminal behaviour is an attempt at looking towards the problem from ecological, psychological and sociological view point and to that extent it is a positive direction towards eclectic approach.

Psychiatry and psychology became inseparable aspects of criminal study, from early 19th century and have woefully eclipsed all the previous theories which betrayed empirical relevance for their support. Pinels' crusade against dehumanising treatment noted out to mentally sick and the prisoners. Esquirol's psychiatric assistance to criminals and the mentally sick and retarded, and Freuds' latent unconscious urge for incest and its manifestation through crime and aggression all reverberated through the civilised world. The influence of psychology, psychiatry and orthopsychiatry attracted people from all disciplines, medicine, law, genetics and sociology in an attempt to converge their effort to study the criminal as a socially sick, whose mind in the midst of frustration has betrayed his reason and social sense, because of a unique psychological and bio-cultural endowments which he represents. Handerson and Gillospie (1962) state, "Criminal behaviour is much more than symptom, it is a psychological reaction dependent on persons particular make up or the personality constitution...the criminal is not a wicked person who with purpose of malice attempts to injure others, but, like every one else he may be victim of emotional storms and distorted ideas, which demonstrate his behaviour so that he may act, temporarily in an uncontrollable manner."

Application of psychiatry and psychology to crime causation has established a host of factors, apart from situational, which force land a person into the crime world. Of these psychopathy which is still incurable, tempts patients to all types of vices, homicides, piromania, Kleptomania, making pretensions and convincing arguments so as to justify the un-

wanton acts. These patients are prone to pathological lying, and sex aberrations. Since the patients are the never-do-wells in their lives they repeat offences and thus pass maximum period of their lives in prisons. It is debatable whether psychotics and neurotics, because of sick psyche, take to socially undesirable and legally punishable activities. No such studies are available which would support that psychotics and neurotics have a high incidence of criminal behaviour. Two interesting studies conducted by Gluecks (1918) and Bany (1941) on the inmates of Sing Prison in America, have revealed that there were some of the criminals who had demonstrated a pronounced degree of psychoses, neuroses and psychopathic symptoms, but when their number was compared to prison population, as a whole, the statistics of sick criminals was as normally distributed as it was in the normal population.

The question still remains whether these criminals were mentally sick before they were convicted and imprisoned, or after the horrible and the dehumanising conditions of the prisons followed by demoralisation and self condemnation that haunted the prisoner round the clock, and even after their release. Evidence and reason support the latter argument. Barns and Teeters (1966) state, "We may assume that there is less mental defect and mental disease among the vastly larger group of criminals who are not apprehended and convicted. If this is the case it is obvious that the criminal class as a whole is certainly as intelligent and stable, mentally and emotionally, as the general population."

This does not preclude the fact that any criminal behaviour of whatever nature, and intensity it be, could have occurred without the emotional disturbance and shattered thinking of the criminal. Personality traits and emotional disturbances, which go with criminal characteristics do not involve overt psychoses or psychoneuroses. Though these may favourably surcharge the potential offender at the super of moment when he is set for criminal action. All in all whatever the history of a criminal be, whatever be his constitution and the precipitating factors, the mind loses the normal equilibrium and the criminal rehearses the crime on the screen of his mind before he sets for the operation. Constilation of predisposing and the precipitating factors is just like innumer-

able bits of glass in a Kaleidoscope which when shaken and mirrored through glass present a different hue and pattern. Just in the same form the predisposing and the precipitating factors, through innumerable constellations, emerge on the mental screen of a potential criminal betray his sense of reason and judgement, and he operates on crime.

The old monarchic view that crime is due to a single factor like sick, heredity, body morphology, endocrinology or an involved mental make-up or contaminated social climate do not offer any rational and agreeable solution to the cause and effect of crime. However, each factor may add to the mental agony of the potential criminal. Criminal behaviour is only a symptomatic of under currents of social, personal mental and constitutional factors which conglomerate and erupt in form of crime, aggression, and such other aberrations. For the causal study of crime, the study of factors which permeates from bio-social, psycho-biological, bio-cultural and psycho-social factors, hold the promise of arresting the crime phenomena and rehabilitating the criminal by evolving a strong will for containing himself within the socially desirable life style. Barns and Teetors (1966) in support of an eclectic approach for the understanding of crime and the criminal mind state, "No physical abnormality, no degree or type of insanity, no extent of mental retardation, no extreme of poverty, no filth of slum life, no lack of recreation, no stimulation of press, movie or television, no hysteria or crime wave, no family discord or broken home will surely and without exception produce crime..."

For an indepth and self contained study on delinquency and crime, psychiatrists, psychologists, orthopsychiatrists, and psychiatric social workers shall have to look into the early child-hood experience of the potential offenders and the convicts. Each potential offender and criminal has a trail of events behind his present aberrations particularly in the early childhood and juvenile age. A criminal does not take to crime overnight. As a child and adolescent he has, deviated because of certain congenital factors, viz. emotionality, psychologically tence, autonomic and central nervous system (Eysenck, 1964) which come in conflict with the social, ethical and the family constraints of the potential deviant. These constraints may stem from economic poverty, psychologically

or physically broken home, casteism, social class, or exposure to slums and ware houses which breed delinquency and juvenile crime. Once the potential juvenile has drifted into vice and, avoids apprehension, his behaviour gets conditioned and it makes an imprint (Engram) on the central nervous system of the offender and because of psychological urge for acquisition, and emotional thrill, the offender deserts family life and flouts all social as well as legal restrictions for his vandalism. When apprehended and convicted, he juvenile offender forms gangs and cliques in and outside the prison and reform homes. These gangs operate within and outside the prison, and with passage of time and added precision in their operations they swell the criminal statistics.

The police, lawyer, doctor and the social worker, in our country, have hitherto failed to coordinate their efforts in treating the criminal as a human creature and his failure from making a socially desirable adjustment in his social set-up. Stringent laws and punitive methods will not help in rehabilitating a psychologically and sociologically sick mind, and keeping his hands off from the crime world. *There should be a search of hearts by all the crime preventing agencies and a change in their attitude and approach in dealing with the criminals.* Punishment since ages has not shown any positive change in modifying the behaviour of criminals, it has rather stiffened their anti social stance as Eysenck (1964) states,... prisoners and criminals generally tend to have a rather high level of emotionality. It would seem to follow that this emotionally would potentiate the antisocial habits which they have developed, to such an extent that they would find it far more difficult than normal, nor-emotional people to supplant these with a set of proper habits. Punishment, presumably by greatly increasing the degree of emotion present, would, therefore have a negative rather than positive effect, it would lead to still greater rigidity in the reactions of the prisoner.

The psychiatrists and the psychologists must help the police the judiciary and the social worker in understanding the mental make up, the personality pattern and the ensuing social pressures so that adequate steps are taken to help the criminal. Psychologists should also determine the type of punishment, duration of incarceration, required medical and psychological help for the rehabilitation of the criminal.

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Degree of Neuroticism : Its Relation with Intelligence and Creativity

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Abdul Hamid Zargar

Eysenck's theory of personality factors, viz. neuroticism and introversion/extroversion have been widely associated with academic attainment and achievement motive (Lynn and Gorden 1961 and Savage 1962). The authors support Yerkes-Dodson law that optimum level of neuroticism leads towards better attainment whereas high or low degree of neuroticism impairs it (Broadhurst 1957). But during the past two decades the researches conducted by various experts, particularly by Furneaux (1956) and Broadbent (1958) and Ruston (1966), have shown contradictory results when compared with the Yerkes-Dodson law. Furneaux and Broadbent have shown that among postgraduate subjects those who attained a high neurotic score were better academic attainers as compared to low neurotic scorers. On the other hand, Ruston who conducted a similar study on 10 and 11 year subjects found that stable extroverts were better performers than those with a high anxiety score. This reveals that relation between attainment and I-E and N factors may be more complex than the Eysenckian theory. Since Furneaux, Broadbent and Ruston have conducted their studies on subjects with different levels of education and age, it is pertinent that the Eysenckian theory be considered in relation to level of education and age rather than the general attainment.

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In view of the studies quoted above, the present investigators considered to study neuroticism as related to intelligence and creativity on a sample of undergraduate subjects.

Procedure

The study was conducted on 150 undergraduate subjects drawn randomly from three different colleges of Srinagar (Kashmir). The average age of the subjects was 18.6 years. Only male subjects were included in the study. Cattell's (1959) culture fair intelligence test scale 3, forms A and B, was used for the measurement of intelligence and Mehdi's (19/3) verbal test of creative thinking was used for the assessment of creativity. For neuroticism Eysenck's (1959) MPI was used. The tests were administered strictly according to the instructions as given in the respective manuals.

Results

Correlation coefficients by Pearson product-moment method were computed between neuroticism on the one hand and intelligence and creativity on the other. The findings are shown in Table 1.

TABLE 1

**Correlation Between Neuroticism,
Intelligence and Creativity (N=150)**

Variables	r	t
Neuroticism and Intelligence	-.04	.5
Neuroticism and Creativity	-.111	1.39

As an extension of the present study the investigators split the sample of 150 subjects between high and low scorers on the basis of median cut-out points. The median cut-out points in neuroticism, intelligence and creativity are shown in Table 2. The mean and standard deviation of high and low scorers are shown in Table 3.

TABLE 2

(N=150)	
Variables	Median
Neuroticism	27.67
Intelligence	30.75
Creativity	143.26

TABLE 3

High Group			Low Group		
Variables	M	Sd	Variables	M	Sd
Neuroticism	34.0	4.14	Neuroticism	20.68	3.66
Intelligence	36.48	4.59	Intelligence	26.32	4.00
Creativity	166.00	22.54	Creativity	125.40	10.35
N=75			N=75		

Correlation coefficients for high and low groups were computed separately with neuroticism as a constant variable in both the groups. The results are shown in Tables 4 and 5.

TABLE 4

**Correlation Between High Scorers on
Neuroticism, Intelligence and Creativity**

(N=75)

(i) Correlation between high neuroticism and high intelligence	-.208
(ii) Correlation between high neuroticism and high creativity	-.028

TABLE 5

**Correlation Between Low Scorers on
Neuroticism Intelligence and Creativity**

(N=75)

(i) Correlation between low neuroticism and low intelligence	-.153
(ii) Correlation between low neuroticism and low creativity	+.23

Discussion

In view of the level of education and age of the subjects in the present study, the authors have observed that there is a negative but insignificant correlation between neuroticism and intelligence. The findings are in line with Eysenck's (1957-1960) theory that the 'cognitive aspect' of personality is independent of 'temperamental aspect' of personality. The mean neurotic score of the subjects in this study is higher than the mean neurotic score of Eysenck's sample, included in this test. Therefore, low attainment of our subjects in intelligence is due to interference of a high level of neuroticism. Rustons' (1966) primary school subjects with an optimum level of neuroticism showed a better scholastic attainments compared to subjects with a high or low degree of neuroticism. Finally, it needs consideration that the relationship of neuroticism with level of attainment at various levels of education should be conducted on longitudinal basis. The correlation between neuroticism and creativity has been found to be negative and insignificant, which may be again due to high neurotic score of our subjects. The present study does not support Dutt *et al.* (1973) findings in which the authors have shown a slight but positive correlation between neuroticism and creativity. The differences could be due to the level of subjects and the tools used for the measurement of creativity. As Lynn (1959) states: "It is becoming increasingly evident that the findings obtained depend on the measuring instrument".

For the high/high and low/low groups, the findings reveal that high neuroticism and high intelligence have a negative and insignificant correlation ($r = -.208$). Between high neuroticism and high creativity the correlation is again negative and insignificant ($r = -.028$). These findings go in line with Yerkes-Dodson law (Broadhurst 1957), but contradict the findings of Furneaux (1956) and Broadbent (1958) whose findings are based on university subjects. The differences may be due to the level of education and age amongst the subjects in the present study and the studies of Furneaux and Broadbent.

Comparing low neuroticism with low intelligence, the correlation is negative and insignificant ($r = -.153$). It is interesting to note that the correlation between low neuroticism and low creativity is slightly positive and significant

($r = +.23$). This may be due to the fact that subjects with low neuroticism are more stable as compared to high neurotics but this fact merits further investigation.

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Reaction to Frustration, Degree of Neuroticism and Value Orientation among Engineers, Doctors and University Teachers

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Values have been defined as an important aspect of one's personality and day-to-day behaviour. Values can be overt/covert, intrinsic/extrinsic and personal or universal. Occupational psychologists like Super (1957), Strong (1952) have also established that value orientation of an individual determines one's professional liking and success of an individual. On the other hand it has also been established that the nature and the type of vocation, which an individual undertakes, shapes his value orientation. In this regard a number of studies have shown that the influence of vocation is pronouncedly established on the basis of interpersonal and social relations of an individual, (Duke 1955, Gray 1963, Rao 1966) and Khare (1966). Again, besides the impact of values on the personal and vocational life of a person, it is observed that mental attitude and perceptual behaviour is also subject to the influence of value orientation.

Neuroticism which is a tendency among some people with biological and glandular predisposition, is also a reflex-

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tion on the value patterns of individuals Eysenck (1964). The degree of neuroticism is an outcome of one's inner turmoil viz-a-viz the social norms and value patterns (Lidhoo, 1982). In this way it may not be out of way to mention that values which have been defined as evaluative attitudes, determine the personality reaction of an individual like Frustration, Neuroticism or reaction formation.

However, it is an interesting phenomenon that people, who are given to particular set of values, have a specific attitude towards their interpersonal and social reactions. In other words, because of the sets of values each individual reacts in a unique form when exposed to frustrating situations. It is with this understanding that the investigators have taken Value orientation and Neuroticism as related to the reactions to Frustration among the three professional groups. For establishing whether there is any relationship between the level of frustration on the one hand and value orientation and neuroticism on the other hand? A few objectives were considered for the proposed research.

Objectives

1. The investigators were interested in understanding the impact of Frustration, Neuroticism and Value orientation among the three professional groups viz., Engineers, Doctors and University Teachers.
2. In the second instance, the investigators wanted to establish the impact of high/low G.C.R. in relation to Neuroticism and Value orientation.

Operational Definitions of Variables

1. The degree of Frustration has been considered in the light of the expressed responses of the subjects in relation to test situations. Frustration according to Rosenzweig (1944), "Occurs whenever the organism meets a more or less insurmountable obstacle or obstruction in its route to the satisfaction of any vital need".
2. As for values, Allport, Vernon and Lindzey (1951) have defined, as evaluative attitudes guiding the overt/covert behaviour of a person.

3. Neuroticism has been defined by Eysenck (1959) as emotional reactivity which is mediated by autonomic nervous system. This autonomic reactivity is characteristic of the neurotic personality type, and it is genetically based.

Definition of Professional Groups

Engineers in the present study are those subjects who have worked in various branches of engineering for the past five years. Doctors, included in the present study, are those subjects who have been working in the field for the last five years. Among the University teachers, only those teachers, who had both teaching and research experience for the last five years, were included for the present research. The subjects were in age range of 28-35 years.

Procedure

(a) Sample

The selection of subjects viz., Engineers, Doctors and University teachers was made on the basis of purposive sampling technique. But, within the profession, random sampling technique was used. In this way hundred subjects from each group were selected for the proposed investigation.

(b) Tools

Study of Values was done with the help of Allport, Vernon and Lindzey (1951) test and for measurement of Frustration Rosenzweig's Picture Frustration Test (1944) Adult Form was used. The degree of Neuroticism was measured with the help of Eysenck's MPI (1959) test.

(c) Administration

The three tests were administered in eight sittings to the three professional groups and in this way the total number of three hundred subjects was covered.

Statistical Analysis

For the purpose of statistical analysis the investigators organised the data under the three areas viz., reaction to Frustration, Value orientation and degree of Neuroticism.

Firstly, one way analysis of variance was computed on the basis of test scores attained by three professional groups on fourteen variables. This was computed for establishing the influence of vocation, a person holds, and its impact on level of Frustration, degree of Neuroticism and Value orientation as shown in Table I.

Secondly G.C.R. was considered to be criterion variable and the other two areas viz ; Values, and Neuroticism were considered as predictors. In this way, the three professional groups were classified under high and low G.C.R. scorers. The significance of difference between "High Frustrated Group" (Low G.C.R.) and "Low Frustrated Group" (High G.C.R.) was computed in the area of Neuroticism and Value orientation for Engineers, Doctors, and University teachers, shown in Table II.

Discussion and Interpretation

While analysing the Frustration scores of the three professional groups viz., Engineers, Doctors and University teachers, the investigators observed that in the group conformity rating (G.C.R.) the Engineers are more stable and well adjusted as compared to Doctors and University teachers. Doctors as compared to University teachers were found to be better adjusted and the University teachers were found to be the least adjusted. The mean differences of the three groups were found to be significant. Hence it is established that University teachers as compared to Engineers and Doctors are more Frustrated. Some studies which include Goodman (1942), Moore and Levy (1951), Ross, Dons and Jackson (1955), Pal (1969), Sinha (1980) and Lidhoo (1982) support the findings of the present investigation.

Under the type of aggression there are obstacle-dominance (O-D) ; ego-defence (E-D) ; and need-persistence (N-P). In the area of (O-D), again University teachers are more instable and obsessed by obstacles as compared to Engineers and Doctors and the differences are significant as shown in Table I. Lidhoo (1982) has also shown that teachers as compared to Doctors and Engineers score high in O—D, which indicates that teachers as compared to Engineers and Doctors feel themselves insecure and constrained while facing novel situations.

Table I
One-Way Analysis of Variance on Frustration, Neuroticism and Values

S. No.	Variable	Means of				Obtained Value of "F"	Difference of means Between			
		Engineers Doctors Teachers					SE _D	Engg. & Doct.	Engg. & TR.	Doct. & TR.
		U								
1	2	3	4	5	6	7	8	9	10	
1.	G.C.R.	66.039	64.659	60.969	** 5.476	1.595	1.381	** 5.071	** 3.691	
2.	O—C	17.259	17.959	23.989	** 20.531	1.153	0.701	** 6.731	** 6.031	
3.	E—D	54.129	54.259	52.481	0.798	1.351	—	—	—	
4.	N—P	28.991	27.901	24.591	** 10.686	1.221	1.091	** 4.401	** 3.311	
5.	E—A	41.319	45.409	46.531	** 4.811	1.594	** 4.091	** 5.212	1.122	
6.	I—A	27.649	26.341	27.791	0.867	—	—	—	—	

	1	2	3	4	5	6	7	8	9	10
7. M—A			30.859	28.709	25.751	** 8.578	1.225	2.151	** 5.109	** 2.959
8. Neuroticism			45.121	49.039	50.319	** 9.801	1.223	3.918	** 5.198	1.281
9. Theoretical			44.501	45.121	43.079	2.582	—	—	—	—
10. Economic			46.709	41.481	40.201	** 18.897	1.120	** 5.298	6.508	1.281
11. Aesthetic			38.569	37.649	37.099	0.641	—	—	—	—
12. Social			38.109	41.659	39.781	** 7.603	0.937	** 3.551	1.672	** 1.878
13. Political			37.659	39.159	42.959	** 16.687	0.959	1.501	** 5.301	** 3.801
14. Religious			35.469	35.121	36.799	1.314	—	—	—	—

Note:

(**) t Sig. at 1% level.

(*) t Sig. at 5% level.

TABLE—II

Significance of the Low and High Frustrated Groups

S. No.	Variable	Group	Engineers			Doctors			University Teachers						
			Mean	S.D.	SE _D t	Mean	S.D.	SE _D t	Mean	S.D.	SE _D t				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1.	Neuroticism	Low Frustrated	44.401	7.715			49.921	10.282		48.723					
		High Frustrated	45.701	7.398	0.756 1.720		48.066	10.292	1.029 1.711		6.381 0.747 4.283				
2.	Theoretical	Low Frustrated	45.301	7.996		**	47.067	4.632		**	45.241	6.638		**	
		High Frustrated	43.702	7.331	0.767 2.086		43.185	5.567	0.512 7.578		40.919	7.794	0.723 5.967		
3.	Economic	Low Frustrated	45.823	11.051			41.705	5.679			40.401	6.456			
		High Frustrated	47.601	8.263	0.976 1.824		41.281	6.381	0.604 0.695		40.001	8.173	0.736 0.543		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4. Aesthetic	Low Frustrated	39.201	9.859	0.833	1.512	36.322	6.644	0.743	3.578	36.562	6.832	0.792	1.416	
	High Frustrated	37.942	6.451			38.981	8.147			37.685	8.864			
5. Social	Low Frustrated	37.688	7.611	0.675	1.274	41.642	6.933	0.664	0.061	39.218	6.019	0.637	1.731	
	High Frustrated	38.549	5.763			41.681	6.335			40.321	6.704			
6. Political	Low Frustrated	37.624	7.502	0.688	0.174	38.847	5.434	0.572	1.119	42.106	5.322	0.734	2.344	**
	High Frustrated	37.726	6.201			39.487	5.984			43.827	8.906			
7. Religious	Low Frustrated	36.126	9.471	0.944	1.378	35.121	6.866	0.701	0	36.861	8.006	0.841	0.143	
	High Frustrated	34.824	9.393			35.121	7.154			36.741	8.804			

Note—(**) t Sig. at 1% level.

In the area of E—D, no significant differences were found among Engineers, Doctors and University teachers. Need persistor (N—P), according to Rosenzweig, refers to perseverance and constant problem solving attitude till the goal or goals are achieved. In this area the results reveal that Doctors and Engineers again persist in their goal directed objectives, whereas University teachers in the midst of frustration take to self defence and do not persist in their achievement. There are significant differences, between Engineers and University teachers, and Doctors and University teachers in N—P. This has also been confirmed by Lidhoo (1982), Chadha (1982). These investigators have shown that Engineers and Doctors have a stronger N—P as compared to University teachers.

Under the direction of aggression fall extraggression (E—A), introgression (I—A), and imgression (M—A). The present investigators have found that University teachers by and large as compared to Engineers and Doctors, try to defend their ego and blame others for their failure thus aggression is turned on the environment. The differences are significant in this area, as shown in Table I.

It is interesting to note that the three professional groups have similar attitude towards introgression (I—A) which reveals that the three professional groups viz., Engineers, Doctors and University teachers by and large try to look for solutions and review their own limitations. The differences in the three mean scores are not significant.

Imgression (M—A), which is another dimension in the direction of aggression, indicates that persons who are emotional and more sensitive, without being rational, take their failures seriously as compared to those who are rational and objective in their approach to problem solving situation. Engineers and Doctors have scored high in the area of M—A as compared to University teachers; again differences are significant. Similar results have also been shown by Sinha (1980), Moore and Sidney (1951) and Chadha (1982).

In the area of Neuroticism, the results have shown, that Doctors and University teachers as compared to Engineers have a tendency towards Neuroticism, whereas all the three groups fall within the normal score limits. Some of

the studies conducted by Goodman (1942), Rao (1966), Pal (1969), Sinha (1980) have also shown similar results.

While examining the Values held by Engineers, Doctors and University teachers, it has been found that Engineers, Doctors and University teachers are more practical and outgoing as their scores in Theoretical value are almost the same. There are no significant differences in Theoretical value. Engineers have a higher score on Economic value as compared to Doctors and University teachers, which means that Engineers are more associated with planning and execution of plans involving financial expenditure. The findings of this study have also been confirmed by Karn (1952) and Khare (1968). In the area of Aesthetic value there are absolutely no significant differences among the three groups viz., Engineers, Doctors and University teachers. Hence it is established that Engineers, Doctors and University teachers are all concerned with Aesthetic attitude. The studies conducted by Khare (1968), Karn (1952), Pal (1969) have also established that there are no significant differences in Aesthetic value among the three groups. In Social value, Doctors have shown their superiority as compared to University teachers and Engineers. This is also in line with the profession of Doctors that they are socially outgoing and friendly. Khare (1968) has also shown that Social value is of more importance to Doctors as compared to University teachers and Engineers. Again, an interesting observation of the study is that University teachers have emerged as more concerned with Political orientation as compared to Doctors and Engineers. This is also in line with the profession of University teachers that they are politically more alive and active as compared to other two professional groups. Pal (1969) has also shown, among the professional groups, that teachers score higher on Political value as compared to other professional groups. None of the three groups have shown any significant difference in attitude towards religion. It shows that the level of education and emancipation is an essential quality for religious tolerance and mutual brotherhood.

With G.C.R. as criterion variable the scores of Engineers, Doctors and University teachers on seven variables, which include Neuroticism, Theoretical value, Economic value, Aesthe-

tic value, Social value, political value and Religious value, were split into two groups. On the basis of the median cut—out point i.e. the upper fifty per cent and the lower fifty per cent. Fisher's "t" test was computed between the high and the low frustrated groups on the seven variables.

It has been found that the high G.C.R. (low frustrated) group among Engineers, Doctors and University teachers as compared to low G.C.R. (high frustrated) group had a lower degree of Neuroticism although the difference between the high and the low Frustrated groups of Engineers and Doctors are not significant. The high and the low Frustrated groups among University teachers have shown significant difference on Neurotic scale. Thus it is established that University teachers with low G.C.R. (high frustrated) group score high on Neuroticism.

The differences among the high frustrated groups of Engineers, Doctors and University teachers in their Value orientation have been found to be quite interesting. In the area of theoretical value the low frustrated (high G.C.R.) groups of Engineers, Doctors and University teachers as compared to high frustrated (low G.C.R.) groups have high Theoretical value, the differences are significant. Thus it is confirmed that better degree of adjustment (low frustration) goes with high Theoretical value.

The low and high Frustrated groups of Doctors have shown significant difference in the area of Aesthetic value whereas low and high frustrated groups of University teachers have shown significant difference in the area of Political value. However, no significant differences were found between the two groups of Engineers in the area of Aesthetic and Political values. Also, the differences among the high and low Frustrated groups of Engineers, Doctors and University teachers in the area of Economic, Social and Religious values were found to be insignificant.

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A Comparative Study of Engineers, Doctors and University Teachers in Relation to Intelligence, Level of Frustration, Extraversion-Introversion and Neuroticism

M.L. Lidhoo

The influence of various personality characteristics like intelligence, proneness to frustration, introversion/extraversion and degree of neuroticism has been studied in relation to professional expectations and professional success. (Strong 1952, Roe 1957, Super 1957) Introversion/extraversion and intelligence have been established as biomedical and biogenic concomitants of personality pattern (Eysenck 1964, Penrose 1949). But the environment, which includes social class, under-the-ceiling culture and professional status activates or slightly undermines the potential influence of these inherited characteristics.

Like other social factors, professional influence, which includes job expectations and professional performance, also interacts with the social, emotional and intellectual behaviour of a person. Thus recruitment to various professions is based on certain basic qualities and other desirable characteristics (Hoppoch 1957 and Shartle 1959). Rather, there should be a linear correlation between certain personality traits and occupational success, as has been established by Super and

Crites (1968). Intelligence, perseverance, creativity, leadership quality and social interaction are some of the important factors which influence the professional performance in the hierarchy of professions.

In the present investigation a modest attempt has been made to study the presence or absence of proneness to frustration, degree of introversion/extraversion and neuroticism among three professional groups, viz. engineers, doctors and university teachers. Besides the above factors, the purpose of the study was also extended to study the level of intelligence among the three professional groups.

The objectives of the study were to determine the following :

1. Whether engineers, doctors and university teachers differ significantly in the level of intelligence.
2. Because of specific profession, if there are significant differences among engineers, doctors and university teachers in the level of frustration.
3. As for the degree of introversion/extraversion and neuroticism the investigator wanted to establish whether profession has any influence on introversion/extraversion and neurotic behaviour of the three professional groups.

Operational Definition of Variables

1. Intelligence in the present investigation has been defined on the basis of Jalota and Tandon's definition.

General mental ability is that general capacity of mind which participates in all sorts of mental activities like reasoning, memorizing, verbal ability, etc. and which contributes towards success specially in intellectual tasks of our daily life like, finding a solution of a problem, scholastic and college success, etc.

This definition has been chosen in view of the test that was considered conducive and suitable for the proposed sample.

2. The level of frustration has been discussed in the light of the expressed responses of the subjects in relation to

* The author is thankful to Km. Vijay Razdan who assisted in data collection and statistical computation.

frustrating situations presented through Rosenzweig's picture-frustration cartoons. The definition as given by the author explains :

Frustration occurs whenever the organism meets a more or less insurmountable obstacle or obstruction in its route to the satisfaction of any vital need.

Further, the author draws a distinction between :

Primary and secondary frustration, the former involving "the sheer existence of an active need" and the latter "subvenient obstacles or obstructions in the path to the goal of an active need."

3. The degrees of introversion/extraversion and neuroticism have been defined in the light of Eysenck's (1959) MPI test. The definitions are as :

Extraversion is the quality related to the conditionability and deconditionability of the central nervous system (CNS); physiological basis of extraversion evidently being in the central nervous system.

The author defines neuroticism as :

High emotional reactivity which is mediated by the autonomic nervous system. This autonomic reactivity is characteristic of the neurotic personality type and it is genetically based.

Definition of Professional Groups

Engineers in the present study have been defined as those subjects who have been working in various fields of engineering for the past five years and have been actively engaged in field work.

Only those doctors have been included in the present study who have been working in the field and other state hospitals for the past five years.

Among the university teachers, only those teachers were considered who had both teaching and research experience for the past five years.

Procedure

Sample : The sample of three professional groups was selected on the basis of purposive sampling technique as far the selection of each professional group is concerned. But, within the profession, random sampling method was used. One hundred and fifty subjects, 50 from each professional group, within the age-range of 30-35 were selected for the proposed investigation. The average age of the subjects was 33.01 years.

Tools : For the measurement of intelligence Tandon's group test of general mental ability (English version) was selected because of its feasibility keeping in view the proposed sample. Intelligence tests in Hindi or Urdu version were not considered due to lingual differences among the subjects. For the measurement of frustration Rosenzweig's picture-frustration test (1944) in original form was selected and for assessment of introversion/extraversion and neuroticism Eysenck's (1959) MPI in original form was selected.

Administration : The three tests were administered individually to all 150 subjects. Each subject was given three tests with an interval of 10-15 minutes between each test. These tests were administered according to standard instructions and the data was arranged in various tables after converting raw scores into standard score units as prescribed in the test manuals.

Statistical Analysis

In view of the objectives of the study the investigator made a comparative analysis of the data of engineers, doctors and university teachers under the three factors, i.e. intelligence degree of frustration and introversion/extroversion and neuroticism. Mean and standard deviations were calculated for all the three professional groups in the areas mentioned above. These are shown in Table 1.

The analysis of variance (3×3 form) was computed for establishing differences among the means of engineers, doctors and university teachers in intelligence, level of frustration and introversion/extraversion and neuroticism. The F-ratio and t-test is shown in Table 2 against engineers, doctors and university teachers in the areas which were under investigation.

Discussion and Interpretation

The data collected on the three professional groups in the areas which were included in the present research were processed for analysis and inferences while keeping in view the three hypotheses. Firstly, inferences were drawn among engineers, doctors and university teachers in the area of intelligence. By applying analysis of variance it was found that the mean scores of engineers, doctors and university teachers demonstrated significant differences as shown in Table 2. Engineers compared to doctors and university teachers were found to be superior in intelligence with a mean IQ of 73.56 which is significant at one per cent level. The differences between engineers and university teachers in their mean scores is 5.46, which is significant at one per cent level and the difference between doctors and university teachers is 2.82 which is also significant at .05 per cent level.

As for the scores on extraversion, it was observed that university teachers compared to engineers and doctors are more extrovert. The mean scores of the three professional groups are 51.54, 44.96 and 50.14, respectively. The difference between engineers and doctors and engineers and university teachers are significant at .05 per cent and 0.1 per cent levels, respectively. There were no significant difference between doctors and university teachers in the area of extraversion.

As for the degree of neuroticism, the three professional groups were found to be alike in this area. The mean scores of engineers, doctors and university teachers are 45.5, 47.8 and 47.6, respectively and these differences are insignificant.

While studying the level of frustration with the help of Rosenzweig picture-frustration cartoons, the investigator found that group conformity rating (GCR) score among engineers compared to doctors and university teachers was the highest and doctors compared to university teachers had also a higher GCR score. This reveals that university teachers compared to engineers and doctors are more frustrated, and doctors compared to engineers are slightly frustrated as shown in Table 2.

Besides the analysis of the three professional groups, the investigator also worked out the differences among engi-

TABLE I
Mean and Standard Deviation of Engineers, Doctors
and University Teachers in Intelligence, Level of
Frustration and Degree of Extraversion and
Neuroticism

S. No.	Variable	M σ	Engineers	Doctors	University Teachers
1.	Intelligence	M σ	73.56 5.7	70.92 6.2	68.1 7.0
2.	Extraversion	M σ	44.96 10.5	50.14 11.6	51.54 9.0
3.	Neuroticism	M σ	45.5 7.7	46.8 9.7	47.6 8.8
4.	GCR	M σ	66.46 10.0	62.08 11.0	57.6 10.5
5.	O-D	M σ	19.76 9.0	21.38 10.4	26.38 9.9
6.	E-D	M σ	52.26 12.5	49.5 10.15	49.48 10.60
7.	N-P	M σ	29.8 8.6	27.9 8.8	22.42 8.5
8.	E-A	M σ	32.3 10.4	37.2 12.4	36.8 9.0
9.	I-A	M σ	29.03 9.2	31.4 9.4	33.0 10.2
10.	M-A	M σ	38.0 11.2	31.2 10.6	29.6 9.0

neers, doctors and university teachers in the type and direction of aggression under obstacle-dominance (O-D), ego-defence (E.D.) need-persistence (N-P) : extragression (E-A), introgression (I-A) and imgression (M-A). In the type of aggression, university teachers dominate by projecting their frustration on the environmental obstacles, whereas engineers dominate in projecting their frustration by demonstrating their persistence to solve their problems (N-P). None of the three professional groups has shown any significant difference in the area of ego-defence (E-D).

Under direction of aggression, which is demonstrated by Extragression (B-A), introgression (I-A) and imgression (M-A), engineers compared to doctors and university teachers have again demonstrated higher degree of imgression (M-A), i.e. capability to gloss over the frustrating situation. University teachers compared to engineers and doctors have demonstrated a higher degree of introgression (I-A), which shows that teachers blame their own lot for impending frustrating situations. No significant differences were found in extragression (E-A) among the three professional groups.

The hypothesis I, that engineers, doctors and university teachers differ significantly in the area of intelligence is established. Engineers have been found to be superior compared to doctors and university teachers. The differences have been found to be significant at .01 and .05 per cent level. These results are in line with Pal (1969). The author in his research on professional students has established that engineering students compared to doctors and university teachers have a superior intelligence and creativity. To account for the differences in intelligence among the three professional groups, it is observed that engineers and doctors, by and large, enter the profession on the basis of their performance in all India/regional competitive examinations. University teachers generally comprise those medical and non-medical students, from other disciplines, who for some reasons have not been able to enter medical, engineering or other competitive examinations. This may be one of the possible reasons for higher degree of intelligence among engineers, doctors as far as the present study is concerned.

In view of the professional affiliation of the three sub-

groups, in the study, the investigator has observed that there are significant differences in the level of frustration among engineers, doctors and university teachers. University teachers as compared to engineers and doctors have demonstrated a higher degree of frustration and engineers as compared to doctors and university teachers have demonstrated only a slight degree of frustration. The higher level of frustration among university teachers may be ascribed to perpetual professional and social competition of this group, which they endeavour as compared to engineers and doctors. The significance of differences in the level of frustration among engineers, doctors and university teachers is established.

While studying introversion/extraversion the results of this study have shown that university teachers are more extrovert as compared to engineers and doctors. This may be ascribed to professional expectations and social interaction of the three professional groups compared to engineers and doctors. University teachers face themselves with the cross-section of students due to which they are expected to be disposed in a more extrovert manner.

The differences in the neuroticism have been found insignificant which indicate that the three professional groups have rational and reality-oriented approach towards their personal and social problems. This has also been established through GCR on picture-frustration test. The hypothesis that university teachers as compared to engineers and doctors are more extrovert is also established.

The present investigation offers a host of questions which merit further investigation. These include pre- and post-professional entrance study of engineers, doctors and university teachers in intelligence, level of frustration, extraversion/introversion and neuroticism. Further, engineers and doctors who are engaged in teaching and research in the professional colleges could be a better sample for a comparative study with university teachers.

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Level of Frustration in Relation to Intelligence and Social Class Among College Students

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and
A.K. Sapru

Level of frustration as a social syndrome has been associated to a host of factors which act and react on the social and developmental process of an individual. Among the factors associated with frustration arousal are social class; Sears (1957), Coons (1957), Pareek (1958 b), Stoltz & Smith (1959), Tripathi (1972), Mathur (1974), Mellina (1977), Malavia (1977), Jean et al (1981); degree of intelligence Karlin & Schwarts (1953), Purdom (1959), Pandit (1978), Bhan (1984); sex and age of the subjects Spache (1951), Stoltz & Smith (1959). Besides the above mentioned personality variables, studies in occupational fields have also shown some relationship with the type of profession and frustration; Happoch & Shartle (1959), Moore, Mary & Schwartz (1963), Super & Crites (1968) and Lidhoo (1982).

It is also observed that the degree of frustration is an interfering factor with the level of achievement whether academic, social or otherwise; Smith (1961), Atkinson (1974), Mathayya (1964), Verma & Upadhyay (1979).

The present study is based on an intensive observation of college students over a period of years and the observations have shown that subjects with a better social class and higher level of intelligence behave differentially as compared to the subjects with an average social class and average intelligence.

The reaction towards frustration of these two groups is also different. In the light of above mentioned observations the present study has been confined to levels of frustration in relation to intelligence and social class among college students.

Operational definition of the variables

Frustration : Frustration has been defined on the basis of Rosenzweig's definition, based on the test cartoons as developed by the author, "Frustration occurs whenever the organism meets a more or less insurmountable obstacle or obstruction in its route to the satisfaction of any vital need."

Intelligence : Level of intelligence in the present study, have been defined as "Immediate capacity for observation and clear thinking." Such a capacity as explained by Raven (1977), helps in establishing the level of intelligence and mental capability.

Social Class : Social Class has been defined on the basis of Williams' (1960) observations. Williams defines social class as, "The ranking of individuals on a scale of superiority—inferiority—equality, according to some commonly accepted basis of valuation."

"A person's occupation is one of the most important determinants of his whole way of living. It can be used to indicate, crudely at least, the relationship of individual to the means of production.....and the way this relation affects their social and political attitudes."

Procedure

Sample : In view of the observations as mentioned above the authors confined the present study to a randomly selected sample of 150 boys who were selected from G.M. College, Srinagar. These subjects were within the age range of 18 to 20 years and were enrolled in 1st year T.D.C. Class. As for the composition of subjects, they represented moderate middle class families from the two communities i.e. Hindus and Muslims.

Delimitation : Only three variables i.e., Reaction to Frustration, Social Class and Level of Intelligence were included in the present investigation. Factors like sex and academic achievement were not taken into account because of the ensuing limitations which accrue on the basis of sex

difference and scholastic achievement.

Tools: In view of the variables which have been included in the study, the investigators surveyed the relevant tests and the following were selected for administration.

1. Rosenzweig's (1944) Picture Frustration Test which is partially non-verbal and culture-free, was considered to be a suitable tool for the establishment of reaction to frustration.

2. For establishment of intelligence, the investigators again selected a non-verbal culture free test designed by Raven (1977). Since our subjects were Hindi and Urdu speaking students and none of them was conversant with Hindi alone, therefore, Raven's Progressive Matrices was considered appropriate test for measurement of intelligence.

3. Kuppuswamy's (1962) Socio-Economic Status Scale Urban was used for establishing the social class level of the subjects.

Administration

The subjects, (N=150), were split into three sub-groups for sake of precision and convenience and the three tests were administered in a number of sittings in which 25 to 30 students were included in each sitting. The tests were administered strictly in accordance with the standard instructions given in the three manuals and the scoring of the test booklets was also completed in accordance with the instructions. The scores of 150 subjects, on the three different tests, were computed for statistical analysis and interpretation. The inferences drawn are shown in the following Tables.

TABLE I

Showing mean and Standard deviation of scores on all the variables

Variables	Mean	S.D.
S.P.M. (Standard Progressive Matrices)	72.54	12.88
S.E.S. (Socio Economic Status)	59.40	18.99
G.C.R. (Group Conformity Rating)	48.98	15.11
E — A (Extragressive)	45.12	10.61
I — A (Introgressive)	30.41	7.96
M — A (Imgressive)	23.72	7.10
O — D (Obstacle Dominance)	21.48	7.24
E — D (Ego Defence)	52.72	9.65
N — P (Need Persistence)	25.56	7.84
E (The superego deviants of extrapunative)	4.64	3.63
I (The Superego deviants of intropunitive)	6.14	4.91
E + I	11.06	5.89
E — E	23.04	9.83
I — I	8.54	5.39
M — A + I	29.84	8.93
N = 150		

Statistical Analysis

Since the investigators were interested in establishing whether or not the high and low G.C.R. will differentiate the subjects in relation to their intelligence, social class and reactions to frustration. For this purpose analysis of variance was considered to be an appropriate statistical treatment.

TABLE II

High Frustration...N=65

Low Frustration...N=85

Showing mean and S.D. of high G.C.R. and low G.C.R.
group in relation to other variables

Variables	High G.C.R./85 Cases		Low G.C.R./65 cases	
	Mean	S.D.	Mean	S.D.
S.P.M.	72.31	12.53	72.84	13.42
S.E.S.	60.25	19.39	57.69	18.50
G.C.R.	59.67	8.62	35.01	9.19
E — A	43.74	10.80	46.92	10.15
I — A	32.34	8.80	27.89	5.86
M — A	23.45	7.24	24.06	6.96
O — D	22.89	7.20	19.63	6.99
E — D	50.58	9.13	55.50	9.66
N — P	26.54	8.16	24.29	7.28
E	4.87	4.00	4.35	3.09
I	5.90	5.02	6.46	4.78
E + I	11.01	5.43	11.12	6.49
E — E	21.31	10.59	25.29	8.30
I — I	8.69	4.95	8.35	5.95
M — A + I	29.17	8.85	30.72	9.11

TABLE III

Test of significance through analysis of variance
between high & low G.C.R. subjects

Variable	No. of cases	Mean	S.D.	S.E.	F-Value	T-Value
S.P.M.	85	72.31	12.53	1.36	1.15	—0.25
	65	72.84	13.42	1.66		
S.E.S.	85	60.25	19.39	2.10	1.10	0.82
	65	57.69	18.50	2.29		
G.C.R.	85	59.67	8.62	0.93	1.14	16.86*
	65	35.01	9.19	1.14		
E — A	85	43.74	10.80	1.17	1.13	—1.83
	65	46.92	10.15	1.26		
I — A	85	32.34	8.80	0.95	2.25*	3.52*
	65	27.89	5.86	0.72		
M — A	85	23.45	7.24	0.78	1.08	—0.51
	65	24.06	9.96	0.86		
O — D	85	22.89	7.20	0.78	1.09	2.80*
	65	19.63	6.91	0.85		
E — D	85	50.53	9.13	0.92	1.12	—3.19*
	65	55.50	9.66	1.19		
N — P	85	26.54	8.16	0.88	1.26	1.75
	65	24.29	7.28	0.90		
E	85	4.87	4.00	0.43	1.67*	0.86
	65	4.35	3.09	0.38		
I	85	5.90	5.02	0.54	1.10	—0.69
	65	6.46	4.78	0.59		
E + I	85	11.01	5.43	0.59	1.43**	—0.11
	65	11.12	6.49	0.80		
E + E	85	21.31	10.59	1.14	1.63*	—2.50**
	65	25.29	8.30	1.03		
I — I	85	8.69	4.95	0.53	1.45**	0.38
	65	8.35	5.95	0.73		
M — A + I	85	29.17	8.85	0.96	1.06	—1.05
	65	30.72	9.11	1.13		

* Significant at .01 level

** Significant at .05 level

The results are shown in table No. III and have been interpreted on the basis of obtained differences between high and low G.C.R. subjects.

Discussion

The investigators collected data on the variables i.e. reactions to frustration, intelligence and social class levels. The data were classified on the basis of high and low G.C.R. In this way the total sample of 150 subjects was split into two groups as shown in Table II. In Table III, the statistical inferences calculated on the basis of analysis of variance are discussed as under.

Between the two groups i.e. the high G.C.R. and the low G.C.R. subjects there are no significant differences in the area of intelligence as the F—Ratio is equal to 1.15 which is not significant at any level. Further, on the basis of F—Ratio between high and low G.C.R. groups in the area of social class the investigators have found that the differences are not significant at any level.

Similarly the differences in directions of aggression between the high and low G.C.R. groups were also computed and the results have shown that there are no significant differences in E—A, M—A and types of aggression i.e. O—D, E—D, N—P. However, the results have shown that there are significant differences between high and low G.C.R. groups in the area of direction of aggression on I—A, $F=2.25$, $P<.05$; similarly in the types of aggression there are significant differences in O—D, E—D, $t=2.80$ and -3.19 , respectively.

As far the super-ego patterns, which are also based on direction of aggression and types of aggression, the findings have shown that the differences are insignificant.

Reviewing the statistical inferences of the present investigation, the investigators have found that the results of this study are not in agreement with the studies conducted by Malvia (1977), Kurashi and Hassina (1982), Upadhyay, Tiwari and Richa (1985). These investigators have established that subjects with low socio-economic background have a higher degree of frustration compared to subjects from upper socio-economic brackets.

The differences in the results of this study as compared to the above mentioned studies may be due to the homo-

geneity of social conditions of the subjects. Further to support our results the review of Magnusson (1977) needs a mention. The author states "Persons and situations are regarded as indispensably linked to one another during the process of interaction. Neither the person factors nor the situation factors per se determine behaviour in isolation. It is determined by inseparable person by situation interactions."

However, the investigators suggest that scholastic achievement and sex differences need to be investigated, as regards the degree of frustration among subjects with different socio-economic background.

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Level of Intelligence in Relation to Scholastic Achievement, Deviancy Proneness and Neuroticism

Dr. M.L. Lidhoo

During the past four decades a host of researches have accumulated in the field of intelligence, scholastic achievement and other personality factors. Although the results of all such studies are not in agreement with one another, yet there is an established evidence that level of intelligence is a factor that determines the level of scholastic achievement and desirable adjustment patterns, Lynn (1971), Lynn and Gordon (1961), Savage (1962), Child (1964), Rushton (1966), Dutt (1972) and (Lidhoo 1980). These studies support the premise that children with high intelligence manage better school grades and have a desirable adjustment in school and family. The above mentioned authors have also established that higher degree of intelligence works as an insulation against neuroticism and deviancy, this has also been confirmed by Bennett (1960) and Lidhoo (1972). However, there are some studies which do not find any relationship between higher level of intelligence and better social adjustment, Healy and Bronner (1936), Hathevey and Monachesi (1953), Gluecks and Gluecks (1956), Bandura and Walters (1959). These authors have found that there is no relationship between intelligence and deviancy. Intelligence and degree of neuroticism. Conger and Miller (1966) conducted a longitudinal study of delinquents and non-delinquents and found that low level of intelligence may be an attributing

factor towards deviancy, otherwise intelligence is normally distributed among normals and deviants.

As regards the degree of intelligence in relation to neuroticism, Lynn (1971), Lynn and Gordon (1961), Savage (1962) have established that a higher degree of intelligence is found to generate a host of adjustment problems but at the same time it helps in making socially desirable decisions and healthy adjustment.

Keeping in view the research studies edited by Naylor (1972) under the title "Personality and Educational Achievement", the present investigator has tried to study intelligence and scholastic achievement in relation to neuroticism and delinquency proneness. In his previous attempt, the author, Lidhoo (1980), had established relationship between intelligence, creativity and degree of neuroticism. The present investigation is just an extension of the previous work, and in the present investigation, it is assumed that a higher degree of intelligence promotes better scholastic achievement besides healthy, emotional and social adjustment. Accordingly a number of null hypotheses were framed for investigation. The hypotheses are :

1. Subjects with above average intelligence will not have below average scholastic achievement.
2. Subjects with high intelligence will not be exhibiting pronounced deviancy.
3. Subjects with above average intelligence will not score high in the degree of neuroticism.

Procedure

Sample : The study is based on a sample of 118 male students, randomly selected, from the three degree colleges viz. Government S.P. College, Srinagar, Government College for Boys, Baramulla and Government College for Boys, Sopore. The age of the subjects ranged between 17 and 19 years. In the light of the hypotheses which include intelligence, scholastic achievement, neuroticism and proneness to delinquency. The investigator selected some available tests for the measurement of each variable. It needs mention that Hindi is not commonly spoken in Kashmir, therefore, the

selection of tests had to be considered in the light of this limitation. For measurement of intelligence Jallota Tondon's verbal test was considered. For scholastic achievement, the annual examination records were considered. For measurement of neuroticism Kandy's Neurotic Personality Inventory and for measurement of proneness to delinquency, Lidhoo's delinquency proneness scale (English form) was selected.

Definition of variables

Intelligence : In the present investigation intelligence refers to "general capacity of mind which participates in all sorts of mental activities like reasoning, memorizing and verbal ability etc. and which contribute, towards success, specially in intellectual tasks of our daily life like, finding a solution of a problem, scholastic and college success etc".

Scholastic achievement has been defined in the present study as overall performance of the subjects in their last annual (external) examination.

Delinquency, in the present study has been defined after Kavaraceus (1955), who defines a delinquent, "As the one who habitually resolves his personal—social problems through overt aggressive behaviour that society finds bothersome and contrary to its value identifications".

Neuroticism according to Eyesenck (1947), is "High emotional reactivity which is mediated by the autonomic nervous system. This autonomic reactivity is characteristic of the neurotic personality types and it is genetically based".

Administration

The tests viz. Intelligence, Neuroticism and proneness to delinquency were administered in three different sittings. In accordance with the instructions as given in the respective manuals. The scoring of the answer books was also done in accordance with the instructions as given in the manuals. For assessment of the scholastic achievement, the investigator collected the total aggregate marks of each subject in his previous external examination.

Statistical Analysis

The data collected on the basis of four variables, were arranged for statistical treatment, such that relationship for each variable was computed through intercorrelations among subjects of high-intelligence and with their corresponding scores on scholastic achievement, deviancy and neuroticism. Besides, it was also considered that a comparison between high and low intelligent groups be made and differences established in their corresponding scores in scholastic achievement, deviancy and neuroticism.

TABLE I

Showing co-efficient of co-relation of high intelligent subjects with their corresponding scores in scholastic achievement, deviancy and neuroticism (N=49)

High intelligence with scholastic achievement	High intelligence with deviancy	High intelligence with neuroticism
$r=0.763$	$r=-0.474$	$r=-0.532$

TABLE II

Showing test of significance between high and low scores of intelligence in scholastic achievement, deviancy and neuroticism

	Scholastic Achievement		Deviancy		Neuroticism	
	High I group (N=49)	Low I group (N=69)	High I group (N=49)	Low I group (N=69)	High I group (N=49)	Low I group (N=69)
Mean	56.9	48.75	43.45	50.04	175.67	179.87
Q	9.18	7.47	12.30	11.21	16.52	17.49
t=		-8.09**		2.96*		1.33

*Significant at 0.5 level.

**Significant at 0.1 level.

Interpretation and Discussion of Results

Reviewing the three null-hypotheses framed by the investigator it is observed that the null-hypothesis No. (1), which states "(subjects with above average intelligence will not score high in scholastic achievement)" is rerected. Subjects with high intelligence have also scored high in scholastic achievement and the coefficient of correlation has been found to be ($r=0.763$), which is highly significant. The second null hypothesis, which states "(subjects with high intelligence will not score high in deviancy)", has been retained as there is a negative and significant relationship between the two variables i.e. intelligence and deviancy ($r=-0.474$). Similarly the third null hypothesis which states "(subjects with high intelligence will not score high in the degree of neuroticism)", has been retained as there is a negative co-relation between high intelligence and degree of neuroticism ($r=-0.532$), which is significant.

The results which have been discussed above are in agreement with Lynn (1971), Savage (1962) and Child (1964), who have also established that subjects with high intelligence made better scholastic achievement as compared to subjects with low intelligence. Similarly, study of Conger and Miller (1964) partially supports the results of this study that low I.Q. may be a conglomerating factor towards deviancy. In the same vein study of Lynn and Gordon (1961) supports the results of this investigation that the degree of high intelligence promotes better adjustment and better mental health. Besides the coefficient of correlations for the test of null-hypotheses, the investigator computed test of significance (Fisher's t-test) for establishing significance of differences between subjects with high intelligence and their corresponding scores on scholastic achievement, deviancy and neuroticism with low intelligence scores with their corresponding scores on scholastic achievement deviancy and neuroticism. The findings as shown in Table II confirm that subjects with high intelligence as compared to the subjects with low intelligence have a better scholastic achievement, low deviancy trends. These differences in scholastic achievement and deviancy have been found to be significant at 0.1 level as shown in Table II. However, the differences in the

area of neuroticism between high intelligent and low intelligent subjects are not significant. This confirms the longitudinal study of Miller and Conger (1966) in which authors have established that degree of neuroticism irrespective of level of intelligence is normally distributed.

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Extraversion/Introversion, Neuroticism, Delinquency and Reaction to Frustration Among Higher Secondary School Boys

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Awtar Kishen Sapru

Introduction

Ever since Mischel's (1969) contribution in the field of personality correlates and their subsequent impact on an individual's behaviour, psychologists and social researchers have reformulated their thinking, as regards the impact of such correlates. Mischel surveyed a number of variables and established that no personality characteristics, save intelligence, stays constant. The earlier studies, however, have time and again established that behaviour is contingent on some of the personality characteristics like extraversion/introversion, neuroticism and degree of intelligence (Eysenck 1960, and Tyler 1947). The survey of research studies compiled by Sarason (1970) have invariably shown that there are some personality factors which remain static and determine the overt and covert behaviour of an individual. On the other hand, Mischel has established that, by and large, behaviour cannot be static because personality characteristics are always in the process of change, which may be due to factors within the individual or outside. Psychologists in the field of motivation like Maslow (1954), and Atkinson (1964), have established that behaviour of an individual is primarily an outcome

of intrinsic and extrinsic drives. Some of the drives, in view of the circumstances, become active and accelerate the behaviour of an individual towards a particular direction and some times these very drives become secondary in importance because of the new priorities which keep on surfacing in day-to-day life situations of an individual.

The statistical assumption is that personality characteristics are evenly distributed among people of different shades and cultures. In other words any personality trait or correlate can be explained in the form of normal probability, which means that accentricism in the behaviour of an individual can be due to the dominance of particular characteristic, as compared to other personality characteristics. This has also been established by Eysenck (1960), Cattell (1968). In Eysenck's study on extraversion and introversion, the research studies have shown that subjects who have high score on extraversion are low in introversion. In this way every personality trait or characteristic is found on a continuum among people who have been selected at random for observation. Any characteristic which figures as a dominant factor of personality, determines the behaviour of an individual despite the presence of other personality correlates, which remain subservient.

Experts in the field of abnormal psychology right from Kretschmer (1925) to Alfred Adler (1935) have also shown that individuals differ in their personality traits because of the dominance and recessiveness of factors present in each individual. Even the Type Theory Psychologists like, Sheldon (1954) have proved that no individual can be totally classified as Ectomorph, Endomorph or Mesomorph. It is only a streak of a particular characteristic that makes a person predominantly either Ectomorphic, Endomorphic or Mesomorphic. Similar studies which have been conducted by Rosenzweig (1950) have also shown that the pattern of self-defence like ego-defence, obstacle-dominance or need persistence are normally distributed among people of different shades and cultures and it is only dominance of one of the patterns that makes a person predominantly extrapunitive, intropunitive, impunitive or the like.

Owing to the dominance of one or the other personality characteristic every individual behaves in a particular manner with his friends, relations and family members. Even in the

day-to-day relationship, either in the world of vocation or social get-together, an individual is prone to behave in accordance with the dominance of his personality characteristics. There are also inferences which have proved the adjustment/mal-adjustment of a person, on the basis of dominance of personality characteristics. Rather, this is the basis of some of the personality tests which have been developed in the field of adjustment, vocational success, dominance of interest and the like. Super (1949) has shown that there are a number of inferences which have proved that the vocational success and vocational competence is subject to the personality characteristics of an individual. Lately, there have been some studies which have been conducted by psychologists in the field of education. These studies have shown that degree of neuroticism or frustration, interfere with the scholastic achievement of students at various grade levels—Oakland (1969), Cor (1961), Butcher, Ainsworth and Nesbitt (1969) and Rushton (1966).

Reviewing the literature on personality correlates and their impact on social and psychological behaviour of a person, it is obvious that a person, who is composed, will have a better adjustment in his social life as compared to a person whose mood keeps on swinging between elation and depression. This is equally true about the success and failure of a person in his world of vocation or about a student in his scholastic achievement and inter-personal relationship with his pair group.

Degree of frustration is also associated with deviancy and abnormal behaviour of people who are otherwise psychologically and physically normal. Keeping in view the history of criminal psychology, Lombroso (1966) and his associates have found that unhappy family conditions which breed frustration among adolescents, lead them to such acts as are socially forbidden and legally punishable. Freudians have gone a step further in explaining cause and effect relationship between frustration and its concomitant factors. The assumption of this school is that a weak super-ego which cannot resist the pressures from the Id impulses leads a person towards social and moral confrontation and thus renders him helpless amidst conflicting situations.

The review of various theories regarding frustration supports the logic that in the midst of equally attractive or repulsive situations, when a person has to choose one and is unable to do so, becomes frustrated. The logic is applicable in any situation whether social, vocational or inter-personal relationship.

Purpose of the Present Study

In view of the enormity of frustration as an over-pervading factor, it is obvious that every individual is confronted with one or more frustrating situations, depending on his personality type and life experiences. If it is true that frustration is the breeding ground for mental tension, mild neuroticism and antisocial behaviour in that case it is pertinent to study the degree of frustration and its relationship with neuroticism and deviancy. Though there have been some studies on frustration among high and low scholastic achievers—Muthayya (1964)—yet there is a reason that the degree of frustration be studied in relation to degree of neuroticism and antisocial behaviour i.e. deviancy.

Kundu (1984) has classified the studies on reactions to frustration in four broad areas, namely reliability, validity, studies based on scholastic performance and studies based on personality variables. The author does not mention any study involving reactions to frustration in relation to degree of neuroticism and deviancy. Accordingly, the present investigators resolved to study reactions to frustration in relation to degree of neuroticism and deviancy. The above statement poses a few questions. Firstly, whether frustration is the basis of neuroticism or deviancy or the degree of neuroticism independently, or the degree of deviancy independently becomes the basis of frustration? Secondly, if the degree of neuroticism or deviancy are not directly responsible for generating frustration, what are the other factors like psychosocial and genetic factors which contribute towards reactions to frustration?

In the light of problems which have already been explored and the links that are missing, the present investigators considered to conduct a study of some of the personality correlates among higher secondary boys in the Valley of

Kashmir. Among the personality factors, investigators considered factors like degree of neuroticism, extraversion/introversion, proneness to delinquency and level of frustration. The studies which were conducted by Atkinson (1953), have invariably shown that degree of frustration is a very important factor so far as the adjustment of the higher secondary school boys and girls is concerned. Even the scholastic achievement of higher secondary boys and girls is dependant on the degree of adjustment of these boys and girls. In the Valley of Kashmir, there is a number of higher secondary schools, meant for boys and girls who represent different sub-classes of the society. So far, no attempt seems to have been made for understanding the factors leading to frustration among the adolescent boys and girls. Neither there is any objective analysis regarding the poor scholastic achievement of boys and girls in the Valley of Kashmir. It is in accordance with these objectives that the present investigators formulated the problem as under :

“Extraversion/introversion, neuroticism, delinquency and reaction to frustration among higher secondary school boys.”

Objectives of the Present Study

The objectives of the present study were mainly to assess the degree of neuroticism and extraversion/introversion among the higher secondary boys of Srinagar District. The second objective of the study was to study the level of deviancy among the higher secondary boys. Last but not the least objective was to assess the level of frustration in relation to above mentioned factors among the subjects. The over-all objective of the study revolve round the degree of frustration and its impact on tendencies towards neuroticism and deviancy. Generally it is believed that better adjustment goes with better mental health and better social adjustment. On the other hand, a pronounced degree of frustration goes with tendencies towards neuroticism and social maladjustment.

Delimitations in the Proposed Research Design

It was proposed that the study under investigation be conducted on higher secondary boys of District Srinagar.

On the basis of reports from the Directorate of Education, Jammu and Kashmir, there are 16 higher secondary schools in the District and these are exclusively for boys. Since the number of subjects within the age range of 18 to 20 years in these schools runs into thousands, it was decided that the study be confined only to 1st year T.D.C. male subjects. Inclusion of girls in the present study would have made the study cumbersome and inconvenient because of the differences in the factors leading to frustration, neuroticism and social mal-adjustment between boys and girls.

Scholastic achievement was not included in the proposed research because of variation in the disciplines available in the rural and urban schools. Secondly, most of the rural subjects were found to be first-generation learners, whereas most of the subjects from urban schools were from the families who had reasonably good educational background.

Hypotheses Proposed for the Investigation

In view of the factors which were considered for the investigation, the investigators developed the following null-hypotheses for establishment of relationship or otherwise between group conformatory rating (frustration score) and neuroticism, extraversion/introversion and proneness to deviancy. The hypotheses which have been framed have been stated as under :

1. That there are no significant differences in reactions to frustration between delinquents and normals reading in higher secondary schools.
2. That there are no significant differences in reactions to frustration between neurotics and normals.
3. That there are no significant differences in reactions to frustration between extraverts/introverts and normals.

Operational Definition of the Variables

The variables which were included in the present investigation are :

1. Reaction to frustration (with G.C.R. as constant factor) ;

2. Neuroticism, extraversion and proneness to deviancy.

For each variable, the investigators have formulated operational definition for the purpose of precision and convenience. Mostly, the definitions have been adopted on the basis of tools which were selected for various variables.

For measurement of frustration, Rosenzweig's (1945) Picture Frustration test was considered to be a suitable tool (partially non-verbal) and culture fair device. Accordingly the definition of frustration has been adopted from Rosenzweig's manual on picture frustration test. The definition is stated as under :

"Frustration occurs whenever the organism meets a more or less insurmountable obstacle or obstruction in its route to the satisfaction of any vital need."

Neuroticism, Extraversion/Introversion

Neuroticism and extraversion/introversion have been defined on the basis of theory developed by Eysenck and Eysenck (1963). The authors state that "Neuroticism refers to the general emotional lability of a person, his emotional over-responsiveness and his liability to neurotic break-down under stress."

Extraversion refers to the outgoing, uninhibited, sociable proclivities of a person.

Eysenck and Eysenck (1964)—the description of typical extraverts and introverts as given by judges is as follows :

"The typical extravert is sociable, likes parties, has many friends, needs to have people to talk to and does not like reading or studying by himself. He craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment and is generally an impulsive individual. He is fond of jokes, always has a ready answer and generally likes change ; he is carefree, easygoing, optimistic and likes to 'laugh and be merry'. He prefers to keep moving and doing things, tends to be aggressive and loses his temper quickly ; altogether his feelings are not kept under tight control and he is not always a reliable person".

Introversion as explained by Eysenck is opposite of extraversion and explained by judges as under :

"The typical introvert is a quiet, retiring sort of person, introspective, fond of books rather than people ; he is reserved and distant except to intimate friends. He tends to plan ahead, 'looks before he leaps' and distrusts the impulse of the moment. He does not like excitement, takes matters of everyday life with proper seriousness and likes a well-ordered mode of life. He keeps his feelings, under closed control, seldom behaves in an aggressive manner and does not lose his temper easily. He is reliable, somewhat pessimistic and places great value on ethical standards."

Proneness to delinquency which has been included in the present study has been defined on the basis of Lidhoo's Delinquency Proneness Scale (1970). The test was found to be convenient for the proposed research and accordingly the definition for proneness to delinquency has been adopted from the manual of the test. The definition which has been accepted for the proposed research is as :

"These subjects show emotional disturbance, lack of interest in family life, flouting the law and vulnerability to sex offences".

Research Design and Methodology

The scientific endeavour of man, while dealing with novel situations, is to develop a systematic and step-wise approach, from where he starts till he reaches the goal. Research in any discipline demands a scientific approach with all objectives in a simplified manner. Any confusion in determining the importance of the variables under investigation or the intervening detractors, will lead the whole operation to an exercise in futility.

Accordingly, any researcher, who addresses himself to any study, of cause and effect relationship, is bound to detour unless his enunciations, hypotheses and the role of independent and dependent variables is not spelt-out. In view of these observations, the present investigators made some

preliminary exercise (pilot study) of building-up a scientific rationale for the proposed investigation which intends to study the impact of frustration among subjects with a tendency towards extraversion/introversion, neuroticism and deviancy. On the other hand, the investigators were also interested in watching the relationship of adjustment with level of extraversion/introversion, neuroticism and deviancy. From a common man's view point, the assumption is that a well-adjusted person is well-poised as far as his social, emotional and mental state is concerned. But, psychologists like Allport (1961), Sheldon (1954) are at variance with a common man and argue that personality which is in constant change because of biological and environmental changes, cannot be predicted in terms of behaviour and reaction to situations, which stimulate different emotions and sentiments. However, these authors agree that if psychology is a science, based on firm cause and effect relationship then it should be able to forecast the behaviour of an organism in a given situation. It is with this understanding that research in personality has enabled behavioural psychologists to predict and control behaviour. Experts in the field of research methodology like Kerlinger (1973) and Van Dalen (1973) have also observed that prediction of behaviour, under experimentally controlled conditions, can be more nearer to consistency and exactness, provided that the steps followed in eliciting behaviour are based on some organised and logical chain. The authors state :

(i) Kerlinger (1973)

".....Research design sets up the frame work of 'adequate' tests of the relations among variables. Design tells us, in a sense, what observations to make, how to make them and how to analyse the quantitative representation of the observations.....A design tells us what type of statistical analysis to use. Finally, an adequate design outlines possible conclusions to be drawn from the statistical analysis." (P-301)

(ii) In the same vein, Van Dalen (1973), while supporting the strict screening of variables under observation states :
"An investigator does not tackle one step at a time,

complete that process and then move on to the next step. He may tackle the steps out of order, shuffle back and forth between steps or work on two steps more-or-less simultaneously". (P-14)

Sample

It was decided that this study will be conducted on higher secondary students of 1st year T.D.C. class, studying in various schools in the District of Srinagar. Obviously the subjects studying in T.D.C. Part 1st fall in the age-range of 17-19 years. There are 16 higher secondary schools in the Srinagar District, of which some are located in the heart of the city and cater to the children who come from educated and socially above-average and middle class families. The other schools cater to the children of semi-rural population with little or no educational back-ground. However, the children who attend the Government schools are mostly from the families whose income ranges between Rs. 900/- and Rs. 1500/- per month. These are the families that are on the cross-roads, as they struggle to shun their economic and educational backwardness and join the economically and socially advanced social class. The subjects who were selected for the present study were studying in the Higher Secondary Schools.

The total number of students studying in T.D.C. Part-I in the above-mentioned study was 1800 and the attempt of the investigators was to include all the students in the study. Therefore, no specific sampling design has been adopted, except of course, the purposive random sampling, as all subjects studying in T.D.C. Part-I in the Srinagar District were included.

Tools for the Study

After the selection of subjects, the investigator looked for the tools which are available and could be suitable for the present investigation. It may be mentioned that, by and large, students in Kashmir can read and write English and Urdu. This limitation had to be considered while selecting the tools for data collection. Accordingly, an attempt was made to choose such tools as are non-verbal or verbal with English or Urdu medium. The survey of tests as given in Long

and Mehta (1966) and Udai Parek's Survey of Tests (1971) were consulted and it was decided that the following tools will be used for collection of data in different areas :

1. For measurement of frustration, Rosenzweig's Picture Frustration Test with Udai Pareek's (1968) adaptation was considered.
2. For measurement of extraversion/introversion and neuroticism Eysenck's (1964) Personality Inventory (EPI) was used.
3. For measurement of proneness to delinquency Lidhoo's (1970) Delinquency Proneness Scale was used.

Statistical Analysis

The data collected on 908 subjects with 15 variables was subjected to the computer analysis. The social science statistical package S.P.S.S. and S.P.S.S.H.—version 5.01 was used for this purpose. Tables drawn from various computations are presented here in for arriving at various inferences. The data of 908 subjects i.e. the total sample forms the basis for arriving at various inferences.

First of all mean, standard error, median, mode, standard deviation, variance, kurtosis, skewness, range, minimum and maximum of all the 15 variables for total sample was calculated and the same is shown in Table I ;

Besides, the investigators also included Pearson's Correlation Coefficients of all the 15 variables separately for total sample of 908 cases, which are given in Table II.

For the establishment of various null-hypotheses the data were further classified in accordance with the high, average and low scores of subjects in different areas i.e. proneness to delinquency, extraversion/introversion and neuroticism ; and these sub-samples were compared with normals on reactions to frustration i.e. O—D, E—D, N—P, E—A, I—A, M—A, and G.C.R. separately.

Out of the total of 908 only 162 cases were found to be prone to delinquency while as 595 were found to be normal. However, on introversion/extraversion scale, out of the total of 908 cases, 217 were found to be introverts, 583 ambiverts (normals) and 108 cases were extraverts. On another dimension i.e. neuroticism, out of the total sample of 908 cases,

177 were found to be neurotic and 590 cases were found to be normal.

Table III shows 't' values of these sub-samples on reactions to frustration for total sample of 908 cases. This table includes name of sub-samples, 'F' values, 't' values and their significance level.

Further, on the basis of factor analysis the constellation of new factors with high factor loadings was computed and the results achieved are given in Table IV.

Finally, Table-V shows multiple regression analysis of total sample (908) cases, for establishing differences in relation to the weightage of each variable with G.C.R. remaining constant.

Interpretation of Results and Discussion

Analysis and interpretation of research observations is the central objective of any study under investigation. In the present study the investigators organised the data in the order of objectives which have been presented in the form of hypotheses. It needs mention that the present study is based on 'Reaction to Frustration of Higher Secondary School Boys in relation to some personality correlates'. Reviewing the first null-hypothesis which states that "There are no significant differences in reactions to frustration between delinquents and normals reading in Higher Secondary Schools", the investigators examined the statistical inferences given in Table III, wherefrom it is established that there are significant differences between delinquents and normals in reactions to frustration viz. E—D, N—P. However, differences in G.C.R., M—A, I—A, O—D were not found to be significant. From means it is clear that delinquents score high on E—D and low on N—P. Studies related to "Reactions to Frustration" of delinquents and normals have also shown that delinquents and normals differ significantly in relation to frustration. These studies are Ranch Flush (1973), Paliwal (1980), Misra (1981) and Guptha (1983). Paliwal and Guptha have established that delinquents as compared to normals have shown greater tendency towards defence mechanisms by way of (N—P) Need-persistence and (E—D) Ego-defence. Whereas subjects with normal adjustment have greater tendency towards (I—A) Introgression and (M—A) Imgres-

TABLE I
Table Showing Mean, Std. Error, Median, Mode, Std. Dev., Variance, Kurtosis, Skewness, Range, Minimum, and Maximum of (908) Cases :

Var- iable	Name of variable	Mean :	Std. error	Std.	Median	Mode	Std. Dev.	Vari- ance	Kurto- sis	Skew- ness	Range	Mini- mum	Maxi- mum
1	2	3	4	5	6	7	8	9	10	11	12	13	
1.	Family	29.28	0.44	27.38	29.00	13.38	179.0	0.95	1.04	74.00	3.00	77.00	
2.	Dependence/ Independence	51.97	0.37	52.31	54.00	11.30	127.8	0.26	-0.24	84.00	4.00	88.00	
3.	Sex	53.48	0.56	54.55	54.00	17.04	90.4	-0.40	-0.25	89.00	4.00	93.00	
4.	Emotionality	42.73	0.58	42.29	38.00	17.69	313.0	-0.38	0.10	96.00	0.00	96.00	
5.	Delinquency Proneness	43.33	0.39	43.15	43.00	11.86	140.8	-0.03	0.08	72.00	6.00	78.00	
6.	Extraversion/ Introversion	47.70	0.36	48.06	54.00	11.06	122.3	-0.06	-0.08	71.00	12.00	83.00	

	1	2	3	4	5	6	7	8	9	10	11	12	13
7. Neuroticism			45.14	0.57	46.16	37.00	17.20	295.8	-0.49	0.18	92.00	4.00	96.00
8. Lie Scale			61.15	0.64	62.87	67.00	19.35	374.7	-0.22	-0.36	100.00	0.00	100.00
9. Obstacle Dominance			13.64	0.24	12.96	13.00	7.28	53.1	0.39	0.56	41.00	0.00	41.00
10. Ego-Defence			55.04	0.33	54.29	50.00	10.16	103.3	-0.17	0.00	60.00	25.00	85.00
11. Need- Persistence			31.43	0.34	31.17	33.00	10.34	106.9	-0.14	0.02	61.00	4.00	65.00
12. Extragression			45.21	0.49	45.57	46.00	14.75	217.5	-0.45	0.14	82.00	8.00	90.00
13. Introgression			28.86	0.30	28.87	29.00	9.15	83.8	-0.34	0.04	57.00	0.00	57.00
14. Imgression			25.99	0.32	25.27	29.00	9.71	94.2	-0.14	0.15	56.00	0.00	56.00
15. Group Confor- mity Rating			50.10	0.45	49.72	50.00	13.67	186.9	-0.14	0.12	84.00	8.00	92.00

TABLE II
Table Showing Pearson Correlation Coefficients of 908 Cases

	Variables														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Family s*	1.000	.4371	.3903	.6360	.7847	.1326	.5432	-.2228	-.0602	.1043	-.0617	-.0047	-.0150	.0216	-.0545
s*	.001	.001	.001	.001	.001	.001	.001	.001	.035	.001	.032	.444	.325	.258	.050
2. Depen- dence s*	1.000	.5111	.5274	.7198	.2089	.2089	.3609	-.2604	-.0077	.0667	-.0563	.0570	-.0823	-.0191	-.0735
Indepen- dence s*	.001	.001	.001	.001	.001	.001	.001	.001	.409	.022	.045	.043	.030	.283	.013
3. Sex s*	1.000	.5978	.7950	.3259	.4422	-.1984	-.1226	.1279	-.0389	.0707	-.0424	-.0637	-.1561	.101	.053
s*	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.121	.017	.101	.053	.001
4. Emotio- nality s*	1.000	.8754	.1969	.6575	-.3427	-.0613	.1234	-.0762	.0430	-.0455	-.0135	-.0960	.085	.343	.002
s*	.001	.001	.001	.001	.001	.001	.032	.001	.011	.098	.085	.343	.002		

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5. Delinquency					1.000	.2693	.6375	-.3177	-.0826	.1375	-.0758	-.0557	-.0505	-.0821	-.1212
Prone-ness s*					.001	.001	.001	.001	.006	.001	.011	.047	.064	.253	.001
6. Extra-version						1.000	1.630	-.0362	-.0836	-.0129	.0702	-.0364	.1078	-.0348	-.0973
Intro-version s*						.001	.001	.138	.006	.349	.017	.137	.001	.148	.002
7. Neuroticish s*							1.000	-.3924	-.0895	.0667	-.0040	.0237	-.0166	-.0116	-.0647
							.001	.001	.003	.022	.452	.238	.320	.363	.026
8. Lie Scale s*								1.000	-.0269	-.1329	.1490	-.1481	.1757	.0497	.0708
								.001	.209	.001	.001	.001	.001	.067	.016
9. Obstacle									1.000	-.3281	-.3748	.0810	-.0986	-.0298	.0461
Dominnance s*									.001	.001	.001	.007	.001	.185	.082

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10. Ego-Defence s*										1.000	-.7512	.5632	-.4617	-.4115	.0666
										.001	.001	.001	.001	.001	.022
11. Need. Persistence s*											1.000	-.6084	.5212	.4237	-.1035
											.001	.001	.001	.001	.001
12. Extragression s*												1.000	-.7503	-.7847	-.1550
												.001	.001	.001	.001
13. Introgression s*													1.000	.2172	.1469
													.001	.001	.001
14. Imgression s*														1.000	.1029
														.001	.001
15. Group Conformity Rating s*															1.000
															.001

S* = Significance level

TABLE III

t-Values of Sub-samples : (i) Prone to Delinquency/Normals ; (ii) Introverts/Normals (iii) Extraverts/Normals ; (iv) Neurotics/Normals on O-D, E-D, N-P, E-A, I-A, M-A, and G.C.R.

Name of subsample	O-D	E-D	N-P	E-A	I-A	M-A	G.C.R.
1. Prone to delinquency	1.31	** -4.01	** 3.02	-0.65	1.61	-0.68	-0.99
Normals	0.189	0.000	0.003	0.518	0.109	0.497	0.322
2. Introverts	1.08	-0.08	-0.69	0.85	** -2.45	0.52	** -2.63
Normals	0.280	0.937	0.490	0.396	0.014	0.603	0.009
3. Extraverts	0.82	-0.03	-0.51	-0.22	-0.55	0.75	-0.38
Normals	0.414	0.975	0.610	0.823	0.582	0.453	0.702
4. Neurotics	0.76	** -2.00	-1.43	-1.55	1.49	0.77	-1.80
Normals	0.446	0.046	0.154	0.121	0.138	0.444	0.072

S = Significance level

*05 level of significance

**01 level of significance

TABLE IV

Table Indicating Varimax Rotated Factor Matrix

Varia- bles	Name of variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	2	3	4	5	6	7
1.	Family	0.77763	0.01483	-0.03413	0.07876	-0.05842
2.	Dependence/ Independence	0.70758	-0.04493	0.09904	-0.02773	0.17185
3.	Sex	0.72579	-0.07580	-0.08091	-0.11416	0.34048
4.	Emotionality	0.88569	-0.02712	-0.02574	-0.01419	-0.00703
5.	Delinquency Proneness	0.96999	-0.04317	-0.02445	-0.02364	0.13379
6.	Extraversion/ Introversion	0.26049	0.01774	-0.02344	-0.10952	0.73818
7.	Neuroticism	0.75873	0.02666	-0.08677	-0.05556	-0.16649
8.	Lie Scale	-0.46289	0.13643	-0.04230	0.16826	0.47918

1	2	3	4	5	6	7
9.	Obstacle Dominance	-0.05295	-0.07475	0.98560	0.05012	-0.05107
10.	Ego-Defence	0.11836	-0.78079	-0.42267	0.29559	-0.05649
11.	Need-Persistence	-0.07827	0.81760	-0.27241	-0.33007	0.09151
12.	Extraregression	0.00869	-0.93193	0.03834	-0.19488	-0.01893
13.	Introgression	-0.04236	0.72016	-0.07118	0.18714	0.30181
14.	Imgression	0.04202	0.73227	0.00902	0.12909	-0.24844
15.	Group Conformity Rating	-0.07578	0.08257	0.03075	0.90166	-0.03761

TABLE V
Multiple Regression of Total Sample

S. N. of variable	Name of variable	B Coefficient	Correlation	Multiple R	R Square	Change in R	F-value
1	2	3	4	5	6	7	8
12	Extraregression	0.15	-0.1550*	0.1549	0.0240	0.0240	** 22.29
11	Need persistence	0.31	-0.1035	0.2934	0.0861	0.0620	** 42.63
5	Proneness to delinquency	0.12	-0.1212	0.3194	0.1020	0.01591	** 34.23
13	Introgression	-0.11	0.1469	0.3285	0.1079	0.0059	** 27.31

1	2	3	4	5	6	7	8
6	Extraversion/ Introversion	0.06	-0.0973	0.3349	0.1121	0.0042	22.79**
9	Obstacle dominance	0.07	0.0461	0.3411	0.1163	0.0042	19.77**
10	Ego-defence	1.66	0.0666	0.3534	0.1249	0.0085	18.35**
14	Imgression	-0.13	0.022*	0.3552	0.1262	0.00127	16.23**
7	Neurotic	-0.02	0.001*	0.3559	0.1266	0.00047	14.47**
			-0.0647				
			0.026*				

* Level of significance

** Significant at .01

sion. The review of studies mentioned above and the inferences drawn by the present investigators reveal that delinquents defend their anti-social activities by blaming the social structure or the environmental conditions.

The second null-hypotheses in the present study states that "There are no significant differences in reactions to frustration between neurotics and normals." On the basis of the statistical inferences it is observed that the differences between neurotics and normals are fairly significant in the area of (E-D) Ego-defence as shown in Table-III. Hence the null-hypothesis is partially rejected as the differences on G.C.R., O-D, N-P, E-A, I-A and M-A, are insignificant, as the neurotics have higher mean on ego-defence as compared to normals. The findings reveal that neurotics react egoistically and consciously to the frustrating situations where as the normals evade frustration by associating the causes of their personal frustration to situations like, O-D, N-P, E-A, I-A, M-A. Studies which have been conducted by Bandura and Walters (1959), Eysenck (1964), Bennett (1960) have shown that neurotics are oversensitive and socially oriented as compared to delinquents and normals. The present study also reveals that neurotics, by and large, unconsciously blame their own-self for frustrating situations. This has been confirmed by Eysenck, Bandura and Walters who have established that under compulsive behaviour the neurotics act in such a way that they generate frustrating situations for themselves and bear the consequences because of the guilt feeling. Further the data on neurotics and normals have also shown that normals who are socially aware, blame the environmental conditions for the situations which are responsible for their frustrating behaviour. The observations made by the present investigators regarding the reaction to frustrating situations by neurotics are also in agreement with the observations made by Malavia (1977), and Dubey and Joshi (1985).

Similarly, while examining the third null-hypothesis in the present study that "There are no significant differences in reactions to frustration between extraverts/introverts and normals", the statistical inferences of introverts versus normals were observed and it was found that there are significant differences between the two groups in the area of G.C.R.

and Introgression (I—A). These differences are significant beyond 1% level.

However, the differences between extraverts and normals in reactions to frustration like O—D, E—D, N—P, E—A, I—A, M—A, and G.C.R. are not significant. It is established that there are significant differences in the level of adjustment (G.C.R.) scores between introverts and normals. Subjects with normal score on extraversion are better adjusted as compared to subjects with high score on introversion.

While reviewing the literature on degree of adjustment in relation to extraversion/introversion, the results are in line with the studies conducted by Verma and Upadhyay (1981), Kandu and Bhaumik (1982). The study of Verma and Upadhyay has shown that better adjustment (high G.C.R.) goes with better scholastic achievement. In another study conducted by Verma and Upadhyay (1979) the authors have established that subjects with high G.C.R. were less prone to anxiety and conflicts and on the other hand subjects with low G.C.R. were high on conflicts and had a poor adjustment level. In the classical compilation on "Frustration" by Yates (1965) the author has shown that subjects who are better adjusted and least prone to extraversion are also socially outgoing and normal in their interpersonal relationship.

In addition to the establishment or rejection of the three null-hypotheses the investigators extended the study and worked out total correlation matrix of 15 variables as shown in the Table II. Factor analysis for establishing the constellation of factors and their loadings are shown in Table IV. The correlation matrix was computed for the purpose of establishing the degree of independence and overlapping of each factor included in the present investigation. The Table of matrix has shown that the correlation between various factors ranges between 0.001 to 0.90166. On the basis of the correlation scores it is established that all the factors included in the present study were partially independent and no two factors have shown a correlation of one. Besides, the computation of factor analysis attempt was made to study the constellation of new factors and it was found that a resolution of two factors has given a new constellation of some

factors. In the resolution of factor No. 1 it is observed that family, dependence/independence, sex, emotionality, delinquency proneness and neuroticism have formed a separate constellation which has been redesignated as deviancy profile. Degree of neuroticism which is not included in the test of proneness to delinquency has shown close relationship with factors included in proneness to delinquency. In the second order of factor constellation, as shown in Table IV, column (ii), factors like ego-defence, need persistence, extraversion, introgression and impression have formed a new constellation and this is in line with Rosenzweig's factors included in reactions to frustration. This constellation has been designated after Rosenzweig's pattern i.e. "Reactions to Frustration".

Keeping in view the regrouping of some of the factors under new constellation it is again confirmed that no two factors of any two tests have emerged with each other. The sub-factors of delinquency proneness have completely emerged under one cluster. From the test of E.P.I. neuroticism has emerged with sub-factors of deviancy proneness. This may be due to the fact that the subjects with proneness to deviancy are also slightly neurotic. This is in line with the studies conducted by Kundu and Bhaumik (1982).

Further the sub-factors of Rosenzweig's 'Reactions to Frustration' have also emerged together under one cluster. The sub-factors (O—D) Obstacle Dominance has not shown any agreement with other factors of 'Reactions to Frustration'. This may be due to the fact that the number of normals who are prone to evade frustration by blaming outside factors was greater than the number of subjects with neurotic tendency. Hence this factor has emerged independently and separately as shown in Table IV under the constellation of factor-3.

Group conformity rating which is an indication of poor or good adjustment has also emerged separately which indicates that this factor has a dominating position as compared to other sub-factors included in Rosenzweig's Picture Frustration Test. Similarly extraversion/introversion as a sub-factor in E.P.I. has also emerged as an independent factor associated with the lie score. This is again shown in Table IV, factor-5. This is in line with the study conducted by Ammerjah and Thimmappa (1980).

While examining the constellation of new factors the findings of the present study have further established that group conformity rating is a positive indicator of degree of adjustment. Similarly deviancy-proneness scale which has emerged with all the sub-factors under one constellation supports the fact that all the sub-factors independently measure degree of proneness to deviancy. This is also in line with the study of Lidhoo (1970). As far the E.P.I. the factor loading have shown that extraversion/introversion have emerged independent of neuroticism which is again in line with Eysenck's study.

Prediction

The third part of statistical analysis was designed by the investigators for computation of multiple regression. The objective of this exercise was to study the impact of sub-factors in relation to level of adjustment, when G.C.R. was constant variable. In other words it needs mention that the investigators wanted to establish the influence of sub-factors on the degree of adjustment. The variables included in this analysis for the sake of accuracy of prediction are :

1. Delinquency proneness
2. Extraversion
3. Neuroticism
4. Obstacle-dominance
5. Ego-defence
6. Need-persistence
7. Extragression
8. Introgression
9. Imgression

The results obtained from multiple regression analysis have been presented in Table V. Table V indicates 'p' coefficient, multiple 'R', 'R' square, change in 'R' square and 'F' values emerging from multiple regression analysis for prediction of criterion variable (adjustment) of total sample. A perusal of Table V, which indicates the percentage contribution, 'F' values and significance level of 'F'

value of various variables contributing to the criterion variable, would reveal that :

- (i) Extragression (E—A) contributes 2.4% to criterion variable with 'F' value of 22.29—($P < .01$) ;
- (ii) Need-persistence (N—P) contributes 6.2% to criterion variable with 'F' value of 42.63—($P < .01$) ;
- (iii) Proneness to delinquency contributes 1.6% to criterion variable with 'F' value of 34.23 ($P < .01$) ;
- (iv) Introgression (I—A) contributes 0.6% to criterion variable with 'F' value of 27.31—($P < .01$) ;
- (v) Extraversion/Introversion contributes 0.4% to criterion variable with 'F' value of 22.79—($P < .01$) ;
- (vi) Obstacle-dominance (O—D) contributes 0.4% to criterion variable with 'F' value of 19.77 ($P < .01$) ;
- (vii) Ego-defence (E—D) contributes 0.9% to criterion variable with 'F' value of 18.35—($P < .01$) ;
- (viii) Imgression (M—A) contributes 0.1% to criterion variable with 'F' value of 16.23—($P < .01$).

However, contribution of yet another variable, Neuroticism is negligible.

All these variables i.e. extragression, need-persistence, proneness to delinquency, introgression, extraversion/introversion, obstacle-dominance, ego-defence and impression contribute 2.4%, 6.2%, 1.6%, 0.6%, 0.4%, 0.4%, 0.9%, and 0.1% to the criterion variable, respectively ; making the total contribution of about 13%.

Conclusions and Suggestions

The statistical inferences of the present investigation have led to some conclusions and suggestions, which have been drawn by the investigators as under :

Conclusions

1. That there are no significant differences between subjects prone to delinquency and normals ; neurotics and normals ; and extraverts and normals on group confor-

mity rating. Introverts and normals differ significantly on group conformity rating.

2. As regards reactions to frustration among delinquency prone and normal subjects, significant differences were found on E—D and N—P.
3. The statistical inferences have revealed that neurotics and normals differ significantly on E—D.
4. Further it is established that introverts and normals differ significantly on I—A, while as extraverts and normals do not differ significantly on any reaction to frustration.

Suggestions

1. In the light of inferences drawn, the investigators consider it worthwhile if a comparative study of boys and girls could be considered for investigation ; keeping in view the variables which were included in the present investigation.
2. Scholastic achievement as a dependent variable in relation to extraversion/introversion neuroticism and proneness to deviancy would be an encouraging investigation.
3. It will be worth-while to consider whether reactions to frustration are also indicative of degree of aggression, as have been shown in some studies based on Rosenzweig's analogy.

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Drug Addiction & Youth Culture

Dr. M.L. Lidhoo

Drug abuse is a malady of early 60's and 70's, which by now has reached enormous proportions all over the world—particularly in the third world. It has been rightly stated that in early 60's the Pop music and Beatle culture plagued the Asian countries and this was followed by 'Hippy Culture' which spread into India and Pakistan carrying with it the philosophy of, *to hell with the world and live unto your own self*. Although the 'Hippy Movement' had to be checked because of its far reaching consequences on the Indian youth, the movement has left a malignant and compulsive impact on the millions of our youngsters who have taken to drugs. By now the menace has exercised the attention of world bodies like WHO, UNESCO, and some religious organizations. But nothing effective has been evolved so far which could help in arresting this epidemic and save the millions of country's youngmen and women from going to rocks.

The Government of India is very much ceased of the growing drug menace and recently a Central Committee on Prohibition, under the Chairmanship of Minister for Welfare Dr. (Mrs.) Rajandera Kumari Vajpai, has been constituted. The main objectives of the Committee are (i) de-addicting the habitual addicts (ii) mobilisation of a mass movement against drug addiction and (iii) strengthening the police vigilance and organization of Welfare agencies against the drug peddlers.

When we look back to the history of drug addiction and its culture, there are innumerable references, which reveal that use of drugs was in vogue in different cultures. Kapoor (1985) supports this observation and states that in India, China, Egypt, Babilonia and Greece, different types of

drugs were in use for psychedelic purposes. When we look back to the Indian culture, it is observed that intoxicant compositions were in use on special festivals. These included alcoholic beverages and their subsequents products. The use of psychedelic drugs in the form of hashish and opium have also been in use among the mystic saints and hermits in India. The history of Aryan civilization and the Hindu ethos reveals that intoxicant beverages *Madera*, were considered to be special drinks on occasions like religious ceremonies and such other functions. While tracing the alcoholic use among Muslims it is observed that alcohol was in vogue among the people of Arabia at the time of Holy Prophet and it continued even upto Hijra. Later on, through a gradual process of stabilization of Islamic rule, alcoholic beverages were banned. Quran discourages the use of alcohol in Sura Baqr verse number 235 saying that harms of alcohol are far greater in number than its benefits. In Sura 'Amisa' it is stated, "Muslims should not pray to Allah while their mind is under the influence of intoxication". And finally in Sura 'Almayida' it is stated that drinking is an act of Satan (devil), so it should be avoided. Similarly a number of prophet's sayings (Hadiths), go against the use of alcohol and other hallucinatory drugs. One of the sayings goes as 'That anything which induces intoxication and distorts mental thinking is prohibited'.

Similarly alcohol has been in use among Christians as well on special occasions, like festivals, marriages and religious ceremonies but there also it is prescribed (Bible) that use of alcohol and drugs which impair the mental reasoning and thinking, are forbidden because they reduce the level of a man from that of crown of creation to a barbarious creature. However, use of psychedelic drugs, as treatment for sickness, is not banned unless its use leads to intoxication and addiction.

It is unfortunate that the use of alcoholic beverages and drugs has gained prominence in the name of religion because their use was permitted in some religious festivals and meditation. As a matter of fact it is an unscientific belief and share myth that under the influence of alcoholic beverages or drugs, the soul and the mind experience concentration and perceive heavenly visions. The fact is that drugs lead to

only psychological hallucinations. When we look to the fact from the biological view point, the use of intoxicant drugs or beverages pollutes the blood circulation and consequently it affects the brain and the central nervous system. Under the influence of drug the brain is not in a position to register a stimulus properly and the response is haphazard and inconsistent. From psychological view point, the use of drugs provide a temporary escape from reality and the victim experiences irrational and inconsistent hallucinations which he enjoys as the peaceful moments. The influence of drug recedes and the victim repeats the doses till he becomes a helpless addict and subservient to the influence of drugs.

Drug Addiction in India

As regards drug trafficking in the country various types of drugs like hashish, heroin, opium and morphine have been confiscated in some of the cities like Bombay, Madras, Delhi and Calcutta. It is reported that Delhi, Bombay and Madras serve as outlets of the Pak-Afghan drugs which are exported to America and European countries. Jammu and Kashmir being border state between India and Pakistan, the smuggled drugs from Pakistan are carried to Indian side and then transported to international market. In one of the studies on drug addiction conducted by a teams of doctors from Maulana Azad Medical College, New Delhi and reported by Asif (1986), it is stated that drug addiction among youngsters from 6-13 years age has risen by as much as 61% in the last five years. In the same study it is reported that there was not a single case of heroin dependence in 1981, where as it has risen to 72.12% in 1984. It is also stated that there are about 2,00,000 addicts in Bombay alone. Reviewing the statistics of drug addicts in south India, the National Institute of Mental Health and Neuro-Sciences Bangalore reports that 31.1% of the population in cities of Bangalore, Belgaum, Bellary, Gulbarga, Manglore in Karnataka are using alcohol and 10% have taken to other drugs. The same study reveals that the addiction is more common among medical students and the youth belonging to upper social strata. The study further highlights the fact that drug addiction is more common among such boys and girls as are living in hostels.

Types of Drugs in Use

Although there are a number of drugs in the form of liquids, tablets, and injections besides some powders, it is difficult to classify all these drugs under different families. However, attempts have been made by medical practitioners and chemists to classify the drugs on the basis of their compositions. Under this classification it is reported that there are four types of drugs in use :

Type A

These include drugs like LSD, hashish, ganja and bhang. These drugs are psychologically addictive and create fear, anxiety and insecurity.

Type B

The second category of drugs in use has been classified under opiates. These drugs include opium, morphine, heroin and pethedrine. It is stated that these drugs create a physical weakness in the victim, which he can avoid only by remaining addicted to the drugs. These drugs are consumed in the form of injections or used with cigarettes. The medical reports reveal that in the absence of the proper doses of these drugs, at different intervals, the victim feels physical pain and cramps (Kapoor, 1985).

Type C

These drugs include analgesics such as disprin, aspirin which are normally available with the druggists and chemists, and can be had without prescription. These drugs also lead to physical illness, due to which addict can not afford to give up the drugs.

Type D Tranquilizers

These include tryptanol and calmpose under the influence of these drugs, an addict develops psychological insecurity, anxiety and loss of sleep.

Others

Besides, the above mentioned classification there are some other drugs in use and are commonly found in our

country. These include mescaline, datura, amentia, muscaria, cocaine and ganja.

Causes of Drug Addiction Among the Youth

It is unfortunate that in mid-50's the 'Hippi's discovered lot of drugs which induce intoxication. And among these crugs LSD was accidentally discovered and its use became common among the people of different classes and professions. These include university students, professors, doctors and the elite. In the beginning the drugs were used as a symbol of status which is very common among the youth culture and by and by it spread to the University Campuses all over the world. Another important factor which encourages the use of LSD was an open support in favour of LSD drugs by a young doctor Leary. The doctor delivered talks on television and expressed his personal experience with the use of LSD drugs. Leary reported that under the influence of drugs he could perceive, think and act in a better way than he could do without their use. While Leary and his associates advocated the use of hallucinogenic drugs, the youngsters all over the world developed a drug mania and experienced with all types of drugs, even the killer ones such as morphine and heroin. After Leary, the intelligentia and people from higher sections of the society spread a wave of drug use in order to experience a better introspection and understanding. Although, this is not true as far the bio-chemical effects of these drugs go.

Among intellectuals who had taken to drugs, William Burroughs issued spine shivering warnings against the use of LSD drugs. A detailed review of this author is contained in a famous book '*Funky*'. This book contains confessions of 'Burroughs' as an addict. The author narrates how the use of drugs segregated him from his previous social setup to a dark dingy and filthy room. The author states that he could not do anything all the day except take druge at different intervals and reel under hallucinations. He had not friends except the drug peddlers and would stake anytning in order to procure a fix of heroin.

The controversy between the statements of Leary and Burroughs led to the war of nerves among those who had

become drug addicts and those who wanted to restrain people from becoming addicts. This also led to distinction between the two types of drugs, the LSD and the heroin. It is stated that if LSD creates mental and psychological dependence on the drugs, heroin leads to physical deterioration till addicts face death at an early age. This statement has been classified under two drug categories. These are opiates which destroy the life of an addict completely and the hallucinogenic drugs which destroy the mental and psychic capability of an addict. Similarly, the adverse effects of the drugs which surfaced for discussion at various levels i.e. among the medical practitioners, psychiatrists and social workers created a new sensation against the use of drugs.

Social Factors of Drug Addiction

Use of drugs does not take place in isolation. It is always accomplished with a host of social and psychological factors. During the early stages of drug use social factors play a dominant role for instance the influence of peer-groups, the social class relations, family status and economic conditions. From the sociological view point it is the group factor that influences an individual for using the drug. Also it is the social factor which determines the type of drug and the manner in which it is taken. Youngsters in the colleges and universities who comprise an elite group, take to costly drugs available in different forms, whereas, the youngsters of same age group but comparatively poor in economic, and social class status, take the locally available drugs prepared out of bhang, datura and tobbaeco powder. Similarly the labour class among the youngsters who depend upon skilled or unskilled labour in which the working conditions are hazardous and mentally disquieting, take to adulterated alcohol, denatured spirit and some cheap pills available from charlatans and drug peddlers. In any case the use of drug, its brand and quantity and the manner in which it is consumed, depends upon the social class status ; professional association and economic affluence.

Psychological Factors

From the psychological side the factors associated with

drug addiction are varied. These include, (i) Group allegiance among the university and college youngsters for sake of pleasure. (2) Attempt to evade reality in which one has to face anxiety, frustration or any such psychological complex. (3) Among the people who are settled in various professions and family life, use of drug is made under the circumstances like professional tension, job hazards, family unhappiness, incapability of managing ones' family and inability to pull on with the spouse and the children. Psychologically the addict is conscious that he is only evading the reality and deceiving his own conscience. But under the pressure of immediately pressing problems, which may be due to professional or family factors, the use of drug provides an easy escape which is neither enduring nor everlasting.

Religious and Moral Factors

Disorganization in the nuclear family has given a let loose to our younger folk, who in the absence of the parental supervision look to their peer group and model themselves in thinking, action, dress and behaviour. Because of the family disorganization religion has also ceased to lure our younger generation towards the acceptance of discipline and supreme moral values. The situation has been compounded by international mass-media which provides cheap entertainment without any consideration of quality and aesthetic values which emanate, from religious percepts and ethical values. Since the institutions i.e., family and religion are being questioned, the modern youth derive pleasure in life which is free from restraints and the use of drugs becomes a psychological panacea for such an unrealistic dream which never comes true. Commitment towards one's religious values is also diminishing because of a global change in thinking and ideology due to new dimension which have been added to the scientific world. Science has dispelled certain notions which were based on religious and moral education.

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Campus Turmoil And Social Anomie

M.L. Lidhoo

The major proportion of the world population, i.e., the youth, are on the rampage and have taken to activities which have resulted in chaos on the campuses, change of governments, defiance of authority and bureaucratic high-handedness in universities, besides making the channels of communication ineffective. The militancy among youth and their perpetual defiance of the *status quo* and authoritarianism is global and persistent, though the precipitating factors differ from country to country, and even within the same country. Youth forums and students unions run parallel to the struggle against colonialism and oppression of people by their fellow beings.

In this area youth have an envious and commendable role. The freedom struggles in Germany and Austria (1884) in Europe, the 19th century movement in Russia, and the independence struggle in France, all were supported by youth organisations and student leaders (Altbach, 1970). Indian youth have a rich heritage of sacrifice, dedication and patriotism, which their predecessors such as Gandhi (1920) Nehru and Subhash Bose (1930), Maulana Azad and many others have emphatically defended and patronized.

What saddens one about the motives and modes of operation of the present-day youth and student organisations is their degeneration into partisan politics, soul-degrading arrogance, predominantly non-academic alibis for going on the rampage and parading emotions, thus betraying the assence of reason and foresight. The incidence of such student and youth revolts in India has increased phenominally during the

past two decades, and at times has taken the worst turn which has led to the closure of universities, postponement of examinations, loss of life and public property, and shameless confrontation with teachers and the administration. Rigging in examination halls, sit-in-strikes *gheraos* and pressure politics have emerged as recurrent manifestations of disruptive factors.

A brief review of student violence and the awesome outbursts reveals that these agitations are mostly non-academic, manipulated and engineered by a minority group of students who perpetuate flimsy problems for their personal interests (Cormak, 1961). There are very few, and almost insignificant, instances where student revolts erupted because of poor facilities, lack of adequate teaching and of the proper atmosphere in class-rooms, and a poor rapport between members of the faculty and the students.

An interesting study on campus violence, conducted by the Ministry of Home Affairs on a sample of 1200 university students from all over the country, revealed that 50% of the subjects participated in agitations because they were driven by political organisations, and the remaining 50% admitted that they participated in strikes and agitations because they were dissatisfied with the teachers and their teaching methods.

A similar study on youth and student unrest was conducted by the present writer on a sample of 70 postgraduate students of Kashmir University. The sample comprised both boys and girls from the Departments of Education, Commerce and History. These students were requested to write down all the problems they face as students on the campus and also as members of our social structure. They were also requested to write the names of daily newspapers, magazines and books which they read in their leisure time.

The information revealed that 85 per cent students faced problems such as poor living conditions, crippling unemployment, general poverty and the fast increasing population. Personal problems like cramped living conditions, poor health, and a poor academic atmosphere in the family were reported by eight per cent of the subjects. Only four per cent mentioned problems like language difficulty in understanding lectures, poor library facilities, and lack of a rapport between the faculty and the students. It is interesting to note that only six out of the 70 subjects mentioned *The Hindustan Times*, *The*

Times of India and *The Statesman*. Three subjects mentioned magazine like *The Illustrated Weekly*, *Femina* and *Eve's Weekly*. Only one subject mentioned that he had read a book outside the prescribed syllabus.

The findings of these two studies, and the one conducted on the Ranchi University Campus (Singh 1967), together with a report submitted by Chagla (1967) to the *Rajya Sabha*, reveal that violence and turmoil on the campuses is a microscopic manifestation of a sick and possessed social structure that holds little promise for young people. Bhatt (1972) has collected opinions from various sections of society on the problems of youth revolts and has concluded that violence on the campuses and other social institutions are main revolts against the established social order.

The author states : "It is now fairly well recognised that the phenomenon of student unrest owes its existence not solely to the unsatisfactory conditions at our higher seats of learning, but there are other deeper factors as well which are related to the wider social, political, economic and even the historical framework within the country". There are many similar observations regarding the unrest among students in particular and the youth in general. The youngsters look contemptuously towards the past that belonged to their elders ; they reproach the present for it has driven them into a conflict without any hope, and they are cynical of the future for that appears to be bleak and awful.

The reports of perpetual and growing anomie which figure in the national dailies, legislatures, notably Parliament, reveal deep-rooted anomalies, layers of corruption at all levels which have dehumanised our once-sane society, and have thrown thousands of people into adversity, want, shameless poverty and swelling unemployment. Millions live at the sub-human level. The reign of discontentment has spread all over the country. Countless people, irrespective of position, age, and persuasion, flout the law and resort to protests which cripple the normal functioning of the law, administration and justice.

If this phenomenon pervades other sections of society, why should we cry wolf and condemn the turmoil among youth and students on the campuses ? What about the

bureaucratic arrogance that spreads the reign of terror on campuses by deploying truck-loads of armed police, and threatening the people on the campus, including innocent students and the faculty, with brutality that merits severe condemnation. What about the political massacre, and that too in Parliament and the State legislatures ?

The youth of today are far more intelligent, politically more alert, with a better understanding and are more sensitive to change than their elders. Therefore, the militancy and the cry about representation of youth on the governing bodies of social institutions are not to be condemned and suppressed ; it is a problem that merits consideration, understanding and appreciation. The future belongs to our young students in the universities and other institutions, and they have full right and reason to know the world they are to inherit.

It is true that no conscientious member of society will condone the hooliganism of youth who resort to lawlessness and ruthless destruction of all that comes in their way, but the number of such truants is very small. They form a minority group who sustain themselves on campuses by demonstrating allegiance to political parties and plant touts there for extension of political warfare (Cormak, 1961). Such trouble-makers should be severely dealt with and without any complacency. The majority of students on the campuses are well-behaved and participate in all academic activities. Their demands are reasonably genuine, and should be looked into and conceded to the extent that it will help them in improving the atmosphere of teaching and learning. It needs to be mentioned, even at the cost of repetition, that the prophylactic measures for the unrest among youth will depend mainly on the change in the existing social structure of which our campuses and other educational institutions are sensitive reflectors.

Much of the pandemonium caused by the unrest among youth would evaporate overnight if a million jobs were thrown open to our graduates and post-graduates. Such a windfall would provide a multipurpose funnel for screening those who go in for higher education just because idleness and loafing are social stigmas, and being on the rolls of a campus brings prestige and ensures privileges. Had such a windfall of jobs been possible, the universities would attract only such students

as would demonstrate a reasonable level of intellectual potentiality and perseverance. It would also help in raising the academic standards which at the moment have fallen considerably as compared to the sister universities in the U.S.A. the Soviet Union, France and other developed countries. For the extension of educational facilities to the weaker sections of society and those who have to work for a living, a net-work of continuing education through correspondence and contact programme could be introduced. A humble beginning in this direction has been made by some of the universities in collaboration with the University Grants Commission.

The existing curricula and the examination system are some of the last vestiges of colonial rule in our education system. These relics have generated many problems instead of ensuring good results. There has been a lot of thinking to get rid of these twin problems, but somehow they have stayed in most of the universities. True, some of the institutions have done pioneering work in overhauling the system of evaluation and curricula that had become obsolete and sterile. The faulty system of evaluation and teacher-dominated class rooms have tried the patience of students and have led to strikes and discord between teachers and students.

The curricula at the under-graduate level should offer a variety of vocational courses so that students with varying interests and aptitudes are provided with ample opportunities to offer courses which suit their talent and through which they can support themselves and contribute to the corporate development of society. The academic courses also need a desirable change in view of the scientific, technological and social change that has shaken our conventionalism in all fields.

The curricula for post-graduate studies should be uniform at the national level so that these can promise equal opportunities to all who compete for various positions at that level. The examination system at the post-graduate level should be a continuous process and evaluation of a student's proficiency, in his chosen field, should be through assignments, short-answer and objective-type tests. Each student should be permitted to complete the course at his own pace. Introduction of the semester and trimester system has proved to be very effective in raising the performance and achievement potential of students. This system has also driven

students to seminars, tutorials and extensive library studies.

Internal assessment has become a question of credibility that depends on the teacher-pupil relationship and such other variances. All sections of students have expressed the view that if the teachers evaluate the students performance, the students, as consumers of the teachers academic potentialities should have the right to evaluate the teachers performance. But it is feared that this bipolar evaluation may lead to academic barter system and thus erode the sanctity of academic norms and the teacher-taught relationship. However, an open internal assessment of students, by inviting students to defend their performance and a teacher's open mind for knowing the assessment of his performance by his students may prove more encouraging for attaining better standards in both teaching and learning.

The youth welfare organisations and the youth representation bodies should form an integral part of co-curricular activities. Such organisations should organise the representation of youth in national and international youth forums. Special coaching classes should be arranged for those who prepare for competitive examinations and also for those who do not benefit from the normal class room teaching. Organisation of summer schools and extension lecture programmes should be a part of the literacy programmes of these organisations. Apart from these programmes, the student organisations should arrange tour programmes, camping and trekking adventures so as to leave the students to their own devices and study by natural resources.

As for faculty help in channelling student power into constructive channels and for promoting development of the campus, socially productive programmes such as those for health, hygiene and corporate life through community centres and recreational complexes, could be adopted for education, health and hygiene, child-care, small-scale and remunerative vocational programmes, besides such other activities as would help in building a bridge of communication between society and the intellectuals. Such inter-communication would prove to be an ideal dream which the intellectual have denied to the common taxpayer who sustains our ivory towers. Our students on the campuses form the most privileged class among the youth. They must realise their obligation towards the broader

spectrum of society and help in extending the benefit of scientific and technological blessings.

Since democracy provides educational facilities to all who fulfil the conditions for eligibility, people from all sections have thronged to the universities. This has swelled the number in the class-rooms, and extended the heterogeneity in intelligence, aptitudes, family educational background and rural/urban representation. These factors have completely transformed the structure of the class-room, which previously used to be homogeneous and represented in particular the well-off section of society. Under the tumult of crowded class-rooms from all sections, the teacher is helpless in fashioning his lectures and teaching methodology so as to suit each and every student with diversified characteristics related to academic achievement.

Because of this anomalous situation in our class-rooms, a sizeable number of students from such homes as have had no educational background for generations past are lost in the midst of conflict. These are the liberated souls whose families used to grow and perish in the midst of illiteracy, caste discrimination, and under unquestioned feudal subjugation.

These first generation students are virtually persecuted by self-condemnation, and this phenomenon becomes more pronounced when they fail to keep pace with students from well educated families. Poor academic performance and class discrimination throttle the feelings of these disadvantaged students; they absent themselves from the regular classes, loaf aimlessly on the campus, and thus get themselves trapped in the hands of gangsters who exploit them by involving them in strikes and agitations for their own interests. Such students form the major chunk of the hooligans on our campuses, and they parade their frustrations through violence and aggression.

On the other hand, students from middle class families are least involved in campus politics because they look forward to a goal directed passport—degree—which assures them a berth in the upper middle class, where upward mobility is guaranteed (Bhan, 1969). The students coming from the under-privileged sections of society should be rehabilitated by offering them extra-educational facilities in teaching and learning

so that they can keep pace with the normal class-room instruction.

More often than not, well-formulated norms governing selection policies and recruitment of faculty members are not observed. The phenomenal growth of universities and the consequent qualitative deterioration in academic standards, the representation of the neglected sections of society through reservation of seats and political interference in faculty appointments are some of the extraneous factors which have denied the entry to our faculties of persons of integrity and academic competence. Such elements in our faculties have eroded the credibility of all teachers, even of those who are fully competent and dedicated to the profession.

Students who are fairly sensitive in registering these extraneous manoeuvrings in faculty appointments, confront those faculty members whose teaching and methodology do not inspire the young, fertile and receptive minds of students. It is disgusting, and professionally degrading, to introduce students to post-graduate instruction through dictated notes, sketchy guides and monotonous lectures. Not only that; it has become common in our faculties for some teachers to avoid taking classes, manipulate levels for participating in seminars and symposia and joining in non-academic parleys with student cliques. The worst example of this kind of behaviour that has tarnished the image of the noble teaching profession is the failure of some faculty members to keep in touch with the latest developments that enhance knowledge in all disciplines.

The erosion of university autonomy through political proxies and ruling party pressures have dealt a lasting blow to the seats of higher learning and to society. The universities and institutions of higher learning will provide leadership to the world of tomorrow. Since the universities are primarily the centres of society, it is incorrect to say that there should not be political interference in the campuses. On the other hand, the students should be actively introduced to the historical perspective of political developments which have resulted in the survival or fall of nations.

The true qualities of leadership such as critical thinking, respect for democratic norms and participation in the academic and administrative development of campuses should be

considered as the essence of higher education and effective citizenship. Students equipped with a broad outlook on life and the world will prove to be bulwarks against cheap campus demagoguery.

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Student Unrest—A Manifestation of Personality and Social Factors

M.L. Lidhoo

Introduction

The problem of student activism, which emerged during the early fifties all over the world, has generated a stream of reflections and counter comments on the role of students and student politicking both within the country and abroad. Many experts from social and behavioural sciences, who address themselves to welfare of the youth, are divided on the cause and effect relationship of student unrest. Scientists and technologists who associate the present upsurge, of student unrest, to scientific and technological development, believe that mass-media, rapid growth of communication and affluence are some of the factors associated with it. On the other hand, the older generation vehemently condemns the ubiquitous role of the present day youth. The still worse and controversial section of the society that sustains itself on changing roles, is of the pseudo-politicians, among students, who primarily address themselves to the cause of students and thus build an image of leadership with petty motives, while in transition from University to politics as a profession. Student vandalism and turmoil has brought the downfall of various Governments like Argentina 1952, Poland 1956, Venezuela 1958, France 1969 and Pakistan 1970. Even in India the student revolt brought the downfall of Congress Government in Bihar in 1967. Peterson (1967), Trent and Crase (1967), Flacks (1967), Winborn and Janson (1967) and Altabuch (1970), all have

associated student vandalism to changing role and value orientation of the youth all over the globe. Yet, Singh (1967), Singhle (1977) and Vidyarthi (1978) have associated problems of student unrest to local problems. The main thrust of these writers for student unrest is associated with unhealthy academic and administrative atmosphere on the campuses, alienation of minority groups among campus students and the like. On the basis of Indian studies, it is observed that student unrest in India manifests factors which are unique to Indian situations, (Altaback 1968 and Lipset 1967). According to Altaback most of the Indian Universities are still functioning on the pattern of pre-independence period. The author states that the University autonomy, student teacher contacts and academic discussions are still like a chase of wild goose. Although the number of Universities has multiplied but the facilities like academic environment, administrative and social interaction between teachers and students has further deteriorated. The author reports that education upto University level, having been thrown open to all sections of the society has diluted the campus culture comprising political groups, groups in casteism, communal lobbies and the like, besides the dwindling faith of young graduates and post-graduates in their educational degrees. The observations of Jha (1982) also make similar reflections on Campus turmoil and youth unrest. The author states that educationists, politicians and experts have divulged into various discussions and prophylactic measures without a solution. A comprehensive study conducted by Vishwa Yuvak Kendra (1973) on a number of campuses like Banaras Hindu University, Aligarh Muslim University, Calcutta, Madras and Hyderabad Universities has shown that different sections of society viz, politicians, teachers, parents and bureaucrats have interpreted student vandalism on the basis of various theories. These theories are commonly woven around political motives, lack of adequate teaching learning atmosphere on the campuses and free for all admission policy at the post-graduate level.

Keeping in view the international political and academic atmosphere which has partly affected the Indian Universities, the present investigator, in association with a student (Dr. Wasil), considered to study the problem of student activism on the campus of Kashmir University. The purpose of the proposed study was to establish an empirical basis of student

unrest, with social, political and psychological factors. The main objectives under investigation were the study of personality analysis and emotional stability/instability of student activists as compared to non-activists, Reaction of Activist group to ethical, moral and social values. Accordingly some null-hypotheses, given under, were framed for test of significance.

- I. "Student activists do not differ significantly in their socially deviant behaviour as compared to non-activists".
- II. "Student activists as compared to non-activists do not differ in the degree of neuroticism and extroversion to be established on the basis of MPI."
- III. "That there are no significant differences in the personality correlates of activist and non-activist students".
- IV. "That there are no significant differences in value orientation among student activists and non-activists".

Research Design

Procedure

The investigator examined about forty studies which have been conducted in India and abroad relevant to factors associated with student activism. Broadly the major areas of research in this field have been academic climate, attitude of teachers and parents towards the youth, emergence of new values and some of the factors associated with problems of adjustment. The research review also provided some insight into the areas that merit attention for further investigation. In this way it was decided that the student activism, among post graduate students, on Kashmir University Campus be looked into from a number of dimensions which include (from personality side), proneness to deviancy, tendency towards neuroticism, personality traits and value orientation. Level of intelligence, scholastic achievement and social class background were not considered for investigation.

Selection of Sample

A purposive and randomly drawn sample of 500 post-graduate students was included in the investigation. These subjects represented different social sections of the society.

Besides a composition of rural and urban background. The age of the subjects was between 20 to 22, and only boys were included in the study.

Selection of Tools

For assessment of personality variables the following four tests were selected—

- I. Lidhoo's Delinquency Proneness Scale (Developed by the author).
- II. Eysenck's MPI
- III. Cattell's 16 PF
- IV. Allport Vernon & Lindzey value scale

Proneness scale was selected, as the test has fairly discriminated the subjects with social conformity attitude and subjects with Deviancy proneness. This test measures four major areas viz. Family Conditions, Emotionality, Social Dependence/Independence and Sex Behaviour.

Eysenck's MMPI was considered for degree of neuroticism and extroversion among activists and non-activists. These two tests were treated as criterion variables and Cattell's 16 PF and Allport Vernon and Lindzey (1960) test of values were treated as predictors.

Administration of the Tests

The tests were administered to 500 subjects in a number of sittings with uniform instructions as given in the respective manuals. On the basis of criterion variables, measured by L.D. scale and MPI, the total sample of 500 subjects was split into three groups i.e. the two extreme group—High and Low and the middle scorers. Out of 500 subjects 50 subjects from the high scorers and 50 subjects from the low scorers, on the basis of above mentioned two tests, were considered for intensive investigation.

Statistical Analysis

In order to establish the significance of differences as many as 25 variables between activists (N=50) and non-activists (N=50) Fisher's 't' test was used as shown in Table I, II and III.

TABLE I

Fisher's 't' test between Activists (N=50) and non-activists on three criterion variables

N=50

<i>Variables</i>	<i>Groups</i>	<i>Mean</i>	<i>S.D.</i>	<i>SE_M</i>	<i>'t' value</i>
1. Deviancy	Activists	61.16	4.86	0.68	34.73**
	Non-Activists	30.16	4.2	0.56	
2. Neuroticism	Activists	58.98	7.26	1.02	11.90**
	Non-Activists	42.92	6.19	0.87	
3. Extroversion	Activists	58.52	7.05	0.99	14.32**
	Non-Activists	37.30	7.74	1.09	

** Significant at 0.01

* Significant at 0.05

TABLE II

Fisher's 't' test between Activists (N=50) and non-activists (N=50) on 16 PF scores

16 PF variables	Activist Mean	Activist S.D.	Non-activists Mean	Non-activists S.D.	SE _D	't'
A	5.48	1.54	3.68	1.36	0.28	6.43**
B	6.06	1.33	5.44	1.34	0.26	2.38*
C	4.16	1.86	4.32	1.75	0.35	0.45
E	6.32	1.28	3.64	1.19	0.24	11.17**
F	5.54	1.46	3.36	1.13	0.26	8.38**
G	5.36	1.25	5.54	1.24	0.24	0.75
H	6.14	1.52	3.00	0.83	0.24	13.08**
I	3.78	1.18	7.64	1.3	0.82	4.71**
L	3.16	1.18	6.26	1.49	0.6	11.92**
M	4.74	1.38	6.66	1.09	0.24	8.00**
N	7.54	1.59	5.20	1.10	0.27	9.75**
O	6.64	1.74	4.36	1.12	0.28	8.14**
Q ₁	7.30	1.24	5.76	1.54	0.27	5.70**
Q ₂	6.64	1.24	5.70	1.52	0.27	3.41**
Q ₃	5.36	1.38	5.72	1.10	0.24	1.5
Q ₄	7.24	1.46	4.46	1.01	0.24	11.58**

** Significant at 0.01 level

* Significant at 0.5 level.

TABLE III

Fisher's 't' Test Between Activists (N=50) and Non-Activists (N=50), on Value Scale.

S. No.	Variables	Groups	Mean	S.D.	SE _M	t value
1.	Theoretical value	Activist	40.08	5.77	0.81	1.84*
		Non-Activist	42.40	6.81	0.96	
2.	Economical value	Activist	40.26	5.02	0.71	4.25**
		Non-activist	44.30	4.47	0.63	
3.	Aesthetic value	Activist	38.20	5.51	0.72	2.30*
		Non-Activist	40.56	4.69	0.66	
4.	Social value	Activist	39.58	6.63	0.93	2.91**
		Non-Activist	35.18	3.37	0.18	
5.	Political value	Activist	45.76	6.50	0.92	4.49**
		Non-Activist	39.82	6.73	0.95	
6.	Religious value.	Activist	36.12	6.35	0.89	1.43
		Non-activist	37.76	5.00	0.70	

** Significant at 0.01 level

* Significant at 0.5 level.

Discussion And Interpretation

On the basis of statistical inferences, it is observed that activists among students are decidedly holding unique type of personality cor-relates and values. Their reaction towards deviancy and neuroticism is also different as compared to non-activists.

In view of proneness to deviancy, neuroticism and extroversion as criterion variables, extreme group subjects i.e. 50 high and low scorers were considered for analysis. On the first instance as shown in Table I. It was observed that activists and non-activists differ significantly on proneness to deviancy. The activist group has a mean score of 61.16 as compared to non-activist group whose score is 13.16. The difference between the two means is significant at one per cent, ($p < 0.01$). This shows that activist group has a pronounced tendency towards activities which are socially undesirable. Again on the scale of neuroticism the mean score of activist group is 58.98 and the mean score of non-activist group is 42.92, the difference is significant at .01 level. This confirms that activists, as compared to non-activists, have a tendency towards neuroticism. As for the differences of activists and non-activists on the score of extroversion, the activists group has emerged as more extrovert as compared to non-activists. These differences are also significant beyond one per cent level. On the basis of these observations the null-hypotheses which state that activists and non-activists do not differ in proneness to deviancy, tendency towards neuroticism and extroversion stand rejected.

As for the differences on personality variables on the basis of 16 PF it has been observed that activists and non-activists differ significantly on factors like 'A', 'B', 'E', 'F', 'H', 'I', 'L', 'M', 'N', 'O' and Q_2 while interpreting the results the differences on 16 PF reveal that activists as compared to non-activists are out going, dull, emotionally less stable, excitable, aggressive happy-go-lucky and expedient. The activist group has also shown a tendency towards adventure tough mindedness, zestfulness, jealous, absent mindedness and shrewdness. On the other hand non-activists have shown their tendency towards high level of intelligence, emotionally stable and placid. These findings have also been established by

Flacks (1967), Dubey (1971) and Farzana (1974), these authors have observed that student activists as compared to non-activists have a low frustration tolerance, project their inner tensions and are least concerned for the conventionalities.

Besides the difference on personality factors between the activists and non-activists, the findings in Table III, reveal that the two groups differ on value orientation as well. The activists have scored high on values like social and Political, whereas non-activists have scored high on Theoretical, Economic, Aesthetic and Religious values. These differences on the values, between activists and non-activists are significant at one per cent level $p < .01$ per cent. The results are in the line with Goldsen, et al, (1960), Aikara (1974) and Redly (1980). Dubey and Reddy have also established that activist group is more oriented towards Political Value. Kerpelman (1969) has shown that activists as compared to non-activists are socially non-conformists, prone to violence and are emotionally unstable. The author further states that non-activists, as compared to activists have a positive attitude towards Religious Values. In view of the findings as stated above, the null-hypothesis, "that there are no significant differences in value orientation among, activists and non-activists" is rejected.

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Education—A Changing Process

M.L. Lidhoo

Like most of the animals especially the primates, nature has endowed man with a rich heritage of social process which he picks up and fits himself in this system by his implicit and explicit behaviour. Among animals the social instinct of gregariousness is very explicitly observed by way of their dominance, territoriality and sex behaviour, which has long been established by ethologists, zoologists and those who address themselves to comparative psychology. Assertion for one's individuality is also a social heritage which is common among animals and human species. Although the demonstration of individuality among animals is by aggression and physical superiority of one over the other. Yet among human beings, the demonstration of individuality or self assertion is by virtue of social status, political power, economic superiority and the like.

Similarly, in the process of preservation of race and progeny both animals and men adopt different ways and means, which help them in controlling or making an expansion in their population. Among animals the homeostasis of the progeny is maintained in accordance with the available habitat, and avenues of food. When the population exceeds the available outlifts of habitat, the means of cannibalism, eating one's eggs or larva and reducing the chances of fertility are being practiced. Accordingly it may not be out of place to mention that human race, in order to preserve its progeny, also adopts techniques of homeostasis like production of more food, development of new colonies and from the protective

side, such techniques as children by choice, system of eugenus and devices which counteract fertilization.

However, with all the above mentioned common characteristics prevalent among animals and the human race, man by virtue of his unique power of reasoning, insight and language surpasses all the species of animal kingdom. In the process of survival, he has induced gigantic changes by way of new discoveries and inventions.

From his pre-historic existence, when man lived like a beast of the jungle, he has emerged as the most creative creature by demonstrating his caliber in moulding and shaping the physical and social environment from time to time. He has established institutions for preserving and continuing the ethos of this race, history, culture and achievements. Socialization as a phenomena is not new in the history of human survival. However, the modes of socialising, the younger generation have phenomenally changed with day-to-day progress in formal institutions, like church, school and the institutions of science, technology and anthropology. Because of man's control over disease, infantile deaths, the boundaries of population have stretched to such parts of the globe where there was no human life. By now we see that the population of the globe vis-a-vis the means of sustenance like food, physical space are shrinking so rapidly that the day may not be far off when starvation, epidemic due to increasing population and congestion will claim half the human race and leave the remaining half as destitute, impoverished and sick. The institutions of human civilization which comprise school, society, culture, religion, established for socialization, emancipation and preservation of the human race, have entered into an era of anomie where every established convention or rule is being questioned. Not only that but on the basis of power and politics these institutions have been reduced to a subservient tool ; which nations exploit against nations on the name of religion, race, sex and territory. It is a matter of great concern for the world bodies which stand for universal brotherhood and equal opportunities for all the people irrespective of their physical territory, language, sex, race and religion. Moreover, man, who is heading towards a new century and has conquered the space which hitherto was a utopia. At the same time it is unfortunate that he has turned his back towards his own brethren and has invented the most

heinous and destructive weapons on earth for the annihilation of his own fellow beings over the world. Every now and then, there are violations of basic human rights in different parts of the globe and every morning the newspaper columns reveal that millions of dollars are being invested for the nuclear weapons—where as in other parts of the world millions of children die because of impoverished living conditions and starvation. The gap between the haves and have-nots has widened beyond endurance and it is irreconcilable that the day will come when world will thrive under the sunshine, where there will be no starvation deaths, no war and no exploitation of man by man.

The only panacea that holds us all alive for a better tomorrow rests in the hands of man by reshaping his social institutions and by promoting mutual trust and goodwill among the people, and all over the world. For this purpose scientists, scholars and social workers have a great promise to fulfil. The social institutions of the society, need to be rededicated for such virtues and values as will usher the human race towards a phenomena of compassion, brotherhood, co-operation and co-existence.

India has a unique privilege for its dialectical philosophy of religions, races and cultures. In the midst of diversity among the races and religions, she all along stood for respect of all the religions and brotherhood of all races and cultures. The religious epics of ancient India depict the richness of virtues among all human beings irrespective of their creed, colour, class and religious persuasion. Equally, it is true of other religions which thrive on the holy soil of this country and preach the gospel of world brotherhood and compassion for all. But it is unfortunate that selfishly motivated sections of our society have taken to such activities as betray our age-old ethics of world brotherhood and co-existence. These mischievously motivated sections of the society have taken to interpret the religion and survival of man on the basis of sectarianism, regionalism and communalism. Not only that they have also engineered and monopolised such activities which spread hatred, and indignation among different sections of society.

There is a world-wide phenomena of violence, oppression of the weak by the dominant forces and exploitation of such

factors which betray the age old bonds of humanism and brotherhood. All these vices are associated to materialistic attitude of man which promotes fulfilment of immediate gains at the cost of compassion, betrayal of values and fellow feelings.

It is stated that the modern education and value orientation have generated a class of youngsters who question the authority of their elders and the conventions of sacrifice, service and mercy. There is no doubt that the latest scientific innovations and discoveries have dispelled all our beliefs and ritual practices due to which modern man has assumed a self-styled supremacy over the old values and social processes. In order to counteract such a tendency of our younger generation towards our social institutions, it is pertinent that the modes of socialization be redefined and reformulated. School as such is one of the most potential institutions where the adults of tomorrow are being hammered for managing various roles of the future society. Parents and teachers can evolve an effective strategy in the planning of education so that the future citizens are judiciously groomed for such roles. In this regard, social education that promotes universal brotherhood, right of self determination, respect for each other's individuality and territorial sovereignty needs to be promoted in all social institutions of each and every society.

In India the role of education has so far betrayed the objectives of mutual understanding, and welfare for the oppressed. This may be because of the after-math of the colonial system of education which divided the Indian population on the basis of class hierarchy and stratification of blue collar and the white collar jobs. The new education policy that has been accepted by the country envisages the promotion of education at all levels with a national scenario i.e. education for all the masses in order to help each individual to contribute his best for the welfare of his own self and the promotion of the nation. It also envisages that social institutions like the legislature, judiciary will foster such programmes as will go hand in glove with the secular constitution of the country. Besides, the new education system at the college and university level, needs a total change from its present thirst on academic curricula to the preparation of the youth for becoming instrumental to counteract the menace of corruption, social evils,

communalism, casteism and regionalism.

The scientific temper, towards which the country is heading, is generating a legacy of social problems such as replacement of man by machine, generation of environmental pollution and the psychosis of nuclear warfare. In order to balance the physical, social and ecological climate, education, religion, and the custodians of the constitution need to play a vital role in promoting only such policies and enactments as will help in preserving the social and cultural milieu of our traditional Indian culture along with the acceptance of new scientific values. Any imbalance in the physical, social and ecological characteristics of the country is bound to drift the nation towards the chaos that breeds disease, starvation and domination of the evil over the righteousness. Mere passing of legislations and shouting of slogans will not help in the promotion of social justice and social equality. It has to be pushed through the institutions of society like, school, mass-media, religious organisations. The rapid increase in our population is posing a serious threat to the future survival of man. Unless socially acceptable measures are taken up through our social institutions, the war against poverty and maintenance of ecological balance will prove futile. Therefore, the agencies of society; whether it is school or the religious bodies, or the mass-media, all have to plead in one voice for having children by choice and not by chance.

Rapid industrialization in the cosmopolitan cities and the newly developed urban areas are also posing a demographic problem and ecological imbalance. Millions of educated and uneducated youth through into the industrial cities in search of employment opportunities. This unrestricted flow of human population creates problems of congestion, health and hygiene, besides, the legal problems which include high crime rate and delinquency among the teen agers. Similarly, deforestation for the development of new colonies disturbs the ecological balance which perpetuate drought and shortage of the ground water resources. All these social problems need to be counteracted by educating our countrymen through various programmes of social education to be designed for urban as well as rural population and such programmes need also to be incorporated in our school curricula so as to educate our young children.

Our society is passing through a crucial phase of transition from agrarian pattern to urbanization, industrialisation and increased application of technology in day to day living. Gone are the days, when a small village was a self-sufficient unit to itself, for instance it had an inbuilt system of managing agriculture, skilled and semi-skilled jobs and above all, an administrative organisation. With the expansion of communication net-work, besides the transport facilities, the old village has ceased to be an independent unit. It has become a small unit in the midst of crowded country, humming with all types of activities like the conventional and the most up-to-date living pattern in its cosmopolitan cities. Therefore, the present symptoms of rising crime rate, loss of values, receding faith in our religious philosophies, disintegration of the conventional family system and eruption of occasional violence are some of the problems indicative of sick social system. In order to quell such malfunctions at the national and the state level, the Government need to evaluate its policies, decisions and their implementations in the earnest order. It also needs to draw active participation from all and sundry by legislating stringent laws for the defaulters.

A change, that is desirable and commensurate with our secular ideals and goals, will be dream of the yore unless the institutions of the society are not geared towards new callings.

1. The structure of families with urbanization and serving women folk, has completely shattered the warmth and attendance our children used to get in their families. In order to compensate the loss of love and affection, which our young children miss, the Government must initiate community centres where the children will be looked through creches and the elders will engage themselves in a fruitful companionship. Education right from the nursery, should inculcate the national spirit, common brotherhood and respect for all. Patriotic feelings and respect for the dignity of labour is an important dimension of social process, which school and the family need to inculcate in the younger generation. Besides, a new system of value orientation stretching beyond the boundaries of caste and communalism needs to be evolved through an effective school curricula to be promoted with the means of media devices.

2. Besides, family and school, legislature, judiciary and the executive are the three important and vital social agencies which control the country's social, legal, economic and political progress. These institutions can play a very promising role for bringing a desirable and progressive social change, provided they keep up to their accountability towards the individual and the society. It is, therefore, pertinent that the accountability and desirable role playing is imbued in the social system of our education at all levels. Study of comparative religions and day-to-day international development must form an integral part of our educational system at the university and college level. This should become a component of general education for students of all disciplines.

The social welfare agencies like, the religious bodies, voluntary agencies and woman's welfare services also have a constitutional responsibility for arranging and organising socially oriented functions for the legitimate rights of the poor sections of the society like, the scheduled castes, minority groups, children in distress and the elderly people who are left uncared.

People in our public life, from all shades and persuasions, who have attained a prestigious position by virtue of their placement in our social hierarchy in the fields like education, science and scientific innovations, politics and the public oriented organizations can contribute a commendable role against the social evils like communalism, sectarianism and fissiparous tendencies which are threatening the unity, integrity and the socialistic fabric of the country.

The press and the media are equally the institutions of cardinal importance for our social education. Although the printed matter in the country, as a whole, has not reached to the masses because of swelling illiterate population living in our countryside, yet the television, radio and cinema can bring a desirable change towards the achievement of our secular goals. This will be possible only if these media agencies are strictly directed towards the programmes and the value education which will elevate the common man from the petty immediate gains towards a healthy social set up, that will encourage confidence in place of insecurity, equality of status with respect, in place of inequality and indignation and above all a feeling of cohesive brotherhood among all sections in place of alienation among the communities.

High Drop Out Rate at School Level Among Gujjar Boys and Girls

M.L. Lidhoo

History and Background

The valley of Kashmir which abounds in gushing waters, sky-touching mountains and beautiful meadows, accommodates peoples of all shades and persuasions. There are various types of ethnic groups, sub-cultures and races settled all-around the hill tops and terrains of the valley. In the midst of various sub-cultures, Gojars constitute a separate ethnic group among the Muslims. Modernization in dress, education and agriculture has not touched this ethnic community because of their strict conservative attitude and resistance towards change. Their resistance in accepting modern changes is like the Hoppy families of Africa, about whom Mead (1928a) states, "Hoppy families in Africa have not been influenced with the change of transport, communication and other innovations".

As far the historical background of the Gojars, the writers hold different views. Even with regard to the origin of the word Gojar, it is reported by Khatana (1974) that the famous word has come from Bhanbatta's Harshcharita and it is believed that Gojar is derivative of Gurjara which means valiant in Sanskrit language. In the process of communication and with the passage of time, the word Gorjar has been pronounced as—Gojar. Some opine that Gojars were originally Hindus who settled in different parts of the country viz., Rajasthan, Maharashtra, Himachal Pradesh and West Punjab (Fauq, 1941). Munshi (1955) reports that Gojars have

migrated to India from some foreign lands but they are essentially Indians settled in different parts of the country. Puri (1968) is also of the same view-point that Gojars are the original inhabitants of India and had their base near Mount Abu. Studies conducted by foreigners reveal that Gojars are descendants of Kushan, Yachi or Tochan which are considered to be the tribes of Tar Tars (Cunnigham, (1970). Regarding the settlement of Gojars in Kashmir, Ray (1955) holds that the last foreign tribe from North-west Province which migrated to Kashmir in search of green pastures were Gojars. This is also reported in Kalhan's Rajatarangini that the Gojar king, Raja Bhoja; controlled Punjab, Himachal Pradesh and some parts of Kashmir. Bamzai (1973) in his famous book "*History of Kashmir*", reports that Gojars are said to be Rajputs who migrated to Kashmir and embraced Islam. Their language Gojari is almost in Rajasthani dialect. The author further states that Gojars settled in Kashmir had Jewish features, and caste.

Present Status

Gojars form a sizeable population in the valley of Kashmir. The places where they are settled are near and around the hill tops of the valley where they have easy access to grazing pastures and open environment. Among the prominent stations, in the valley, Shopian, Pahalgam, Uri and District Kupwara are worth mention. Gojars are also settled in the province of Jammu, particularly, in Poonch and Rajouri. Even though some hundreds of years have passed, the Gojars in the valley live nomadic life; moving from one place to another in search of grass and fodder and in accordance with the change in seasons. Since the present study is confined to the Gojars of the valley, a descriptive analysis of this tribe will be worthwhile in explaining the present living conditions of this community. Gojars in Kashmir are all Muslims by faith and accordingly their dress, way of life, marriage and kinship is partly different from Gojars who are still holding to Hinduism and are settled in other parts of the country. On the basis of settlement Gojars in the valley can be classified into two categories i.e. Gojars who have settled in remote parts of the valley and have taken to agriculture as their livelihood. The second category comprises Gojars who

have not taken to settled life. They keep on moving from pasture to pasture, as they live on cattle-rearing. The Gojars who are settled have imbibed certain social and cultural imprints from the local Muslims, whereas the nomadic Gojars are still living a pre-historic pattern of life. These nomadic Gojars, in the valley, are commonly known as Dodhi and Bakarwal Gojars.

Type of Dwelling

Gojars in general, in the valley, live in small mud-plastered hutments commonly known as Kothas. These structures are usually erected against the slope of small hills. The construction is totally devoid of any ventilation except a small entry door. The area inside is around 140 sq. feet and is shared by animals as well. The floor of the house is not concrete, therefore, the moisture of the soil and the wetness, caused due to animals, breeds lot of infections and diseases. In the ceiling of the Kotha, there is a small hole which is the only outlet for all types of bad odour and smoke.

Language

Gojars, in the whole of the valley and in district Baramulla, use only one dialect, which is known as Gojari. This language is partly influenced by Punjabi, Sanskrit, and Dogri dialect. The script of Gojars language is in Urdu and a number of books which have been cited in the following pages are found in Urdu script. This has been supported by Grier-son (1927) and Utindra (1961).

Dress

Gojars in the valley of Kashmir are very conventional in their dress. The men wear a long shirt and a trouser which in Kashmir is wrongly regarded as the Islamic dress. Besides, they wear a turban (head-cloth) which also bears a different style and matches with the style of Pathans in West-Pakistan. Ladies usually wear a long shirt and a Shilwar with a cap on their heads. Though Purdah system, among ladies, is not observed but usually Gojar ladies do not face strangers, and when they move out of home, they wear a cloth, known as 'Chipra' with which they cover their bodies.

Marriage

Marriage as an institution carries high sanctity among the Gojars in the valley of Kashmir. Early marriage is very much in practice among Gojars and is solemnized in most simple form. A Maulvi (a religious priest) performs the religious duty while the bride and the groom give consent to marry each other. The corrupt evils of dowry and bargaining have not sneaked into the culture of the Gojars. Usually the family of bride-groom extends some monetary and other help to the parents of the bride. Very plain food comprising milk, butter and rice is served to the guests from both sides. Divorce is not very common, however, according to Islamic law, if circumstances demand, a Gojar may opt for divorce or may have more than one wife. Adultery is strictly forbidden and often results in murders.

Food and Eating Habits

Because of poor economic conditions and meagre agricultural returns, the Gojars can't afford balanced food and in the absence of reasonably good food with minimum calories, most of the Gojar families look anaemic and sick. This poor state of health has been mostly observed among Gojar ladies and children who suffer from chronic bronchitis, round-worms, hookworms and gastro-intestinal dysfunction.

Political Awakening

No matter how the state and central governments strive for political freedom and adult franchise for all sections of society, it will continue to be a utopia till a common man is not educated so as to enable him to understand rights and duties in a free and democratic society. It is more true about political life of the Gojars, whose literacy percentage is not even five per cent. The present investigation has revealed that Gojars, irrespective of their age or sex, have never experienced how to cast a vote, on the other hand as reported, their votes are collected by the political agents of various parties who cast these votes in the ballot boxes of their respective representatives.

Occupation and Source of Income

Gojars are very hard working, besides their trust worthiness, they are being liked as labourers and semi-skilled workers. The main occupation of the Gojars in the valley of Kashmir is rearing of animals particularly herds of sheep, horses and buffaloes. In the valley of Kashmir and district Baramulla in particular, Gojars are mostly engaged in this type of profession. However, a small section of the Gojars engage themselves in farming, but it is only a secondary source of income. The land under cultivation around the hill tops is not cultivable and the yield is very poor. Therefore, the Gojars usually take to un-skilled jobs like labourers, house-hold servants or as watchmen. But all in all the Gojars in the valley live a life of struggle in the midst of economic want.

Research Plan

In the light of above mentioned history, and living conditions of the Gojars, the present investigator surveyed a number of Gojar-dominated villages in district Baramulla. The purpose was to select any representative village for an indepth study of the Gojars and their day-to-day living conditions. For this purpose, the investigator adopted *Garkot* as a representative sample of villages for indepth investigation. This village is situated on a hilly terrain which is mostly barren because the rocks and sandy soil. A small stream flows down to rocks, carrying down the icy-water from the snow-clad mountains. The total area of the village is about 190 thousand square mts. and total population of the Gojars of the village is about 720 families.

The State of Jammu and Kashmir has monitored a special cell in the civil secretariat for over-all development of Gojars. Many programmes have been introduced by Central and State Government for educational, social and economic development of Gojars in Kashmir, but how far such programmes have percolated from Central and State Governments down to the common tribal man (Gojars) is the basic objective round which the present research has been formulated. Some of the important objectives of the present study are as,

1. Number of school going children in the village within the age group of 6 to 11.
2. Number of children attending the school at various grade levels.
3. Report from the school regarding drop-outs of Gojar boys and report of the teachers regarding the level of intelligence and level of achievement of Gojar and non-Gojar boys.
4. Number of girl students attending the school.
5. Attitude of parents towards social change, family welfare programmes including family planning.
6. Attitude of parents towards education of their children.
7. Influence of mass communication on personal and social life of the Gojars.

Procedure

Keeping in view the objectives of the proposed study, a preliminary survey of the village, included, population, schools, government facilities, was carried on the basis of two checklists. Of these one was framed and designed for the parents and the other one for the teachers. These two checklists were administered on a small sample of the families and redrafted in the final format. The final investigation was conducted on 45 families on the basis of objectives included in the study. In the first instance, as shown in Table I, the investigator collected information regarding the age of the family head i.e. male, and the spouse (female). As far the number of children each family bore four to five children within the age range of 5-15 years.

TABLE I
Showing the age of the male and female members of 45 Gojar Families.

Age range in years	Adults		Children	
	Male	Female	Male	Female
0—9	—	—	35	43
10—19	—	—	90	95
20—29	31	62	—	—
30—39	91	72	—	—
40—49	60	43	—	—
50—59	45	22	—	—
60—69	13	9	—	—
70—79	7	2	—	—
80—89	2	—	—	—
	249	210	125	138

Table II shows the number of male and female children in various age-brackets and the number of children attending schools at various grade levels.

TABLE II
Showing total number of children attending school at various grade levels

Age Range	Class	Male	Female	Location of the school
5-14 years	Primary	20	5	Garkot-Uri
15-17 years	Middle	13	3	Garkot-Uri
18-20 years	High	6	2	Lagama
		39	10	
20-25 years	Professional colleges in Srinagar.	Engineering/Medical		
		N=1	N=1	

Similarly, a detailed investigation was conducted regarding the vocational positions of Gojars in these 45 families. This is shown in Table III.

TABLE III

Showing vocational position of Gojars N=45

Agriculture	Cattle Rearing	Skilled	Semi-Skilled	Business
All	All	Driver/N=1 Policeman N=1	Labourers N=35	8

Note: No female was engaged in any vocation except the routine house hold work.

Discussion and Interpretation of Results

The collected information on the basis of parent comment checklist and teacher comment checklist was analysed and interpreted in the form of tables as discussed. Firstly, the investigator observed that among the 45 families there were 197 children ranging from 6-14 years. Of these, there were only 90 girls, the remaining were boys. Of these children i.e. boys and girls, only 35 boys and 15 girls were attending schools (located in the village) in various grade levels. It is very unfortunate that in the beginning all children around the age of six years get admitted to the school because of the allurements of scholarships, uniform and free books. But within the first two years, half the children drop-out and only a small number continues upto the primary stage, and a very insignificant number of students continue upto the middle or high school level. This is shown in Table IV.

The investigator collected the results of scholastic achievement of Gojar and non-Gojar boys attending the same school. Besides, for assessment of intelligence Bhatia Battery Test was administered on 40 Gojar and 40 non-Gojar boys. The results show that by and large Gojar boys as compared to non-Gojar boys have poor level of intelligence and poor scholastic achievement. This is shown in Table V.

TABLE IV

Showing drop-out rate of students at various levels

Age range	No. of students admitted		Drop outs at primary Level		Drop outs at Middle levels		Drop outs at High levels	
	Male	Female	Male	Female	Male	Female	Male	Female
			%age	%age	%age	%age	%age	%age
5-9	40	20	50	70	—	—	—	—
10-14	20	6	—	—	35	50	—	—
15-19	13	3	—	—	—	—	50	33

TABLE V

Showing scholastic achievement and level of intelligence (in I.Q. points) of Gojars and Non-Gojar subjects N=(Gojars/Non-Gojars) 40 each

	Scholastic-Achievement				Intelligence in I.Q. Points			
	Gojars		Non-Gojars		Gojars		Non-Gojars	
	N	Per cent	N	Per cent	N	Per cent	N	Per cent
60% and above (Above Average)	3	7.5	9	22.5	Nil	Nil	2	5
45% and average	12	30	16	40	22	55	32	80
33% and above (Below average)	25	62.5	15	37.5	18	45	6	15

In the second analysis, information regarding the attitude of parents towards the education of their children was collected. The study revealed that Gojars believe in immediate gains by having their children to help them in cattle rearing and agriculture instead of sending them to schools. Table VI shows the positive/negative attitude of the parents towards education of their children.

TABLE VI

Showing attitude of parents towards the education of their children N=40 families
Attitude towards Education

Male children				Female children		
No. of families	Posi-tive	Nega-tive	Mixed	Positive	Negative	Mixed
15	✓	x	x	✓	x	x
20	x	x	x	x	x	x
5	x	x	✓	x	x	x

Similarly, attitude of Gojars towards social change, namely family welfare programmes and family planning programmes has revealed that they have a very poor opinion about such programmes and particularly they resist family planning as it is against their religious tenets. When a few families were interviewed and were educated about the family planning programmes, they dismissed the idea as irreligious and non-sensical. Besides illiteracy coupled with poverty, the resistance of Gojars towards family planning is observed and needs to be taken seriously at national level. The statistics of family welfare programme in Tehsil Uri does not reveal that any Gojar, male or female, has gone for family planning programme, as shown in Table VII.

TABLE VII

Showing attitude of Gojars towards Family Planning (N=40 Male Heads)

No. of families	Vasectomy			Tubectomy			Condom		
	Posi-tive	Nega-tive	Mixed	Posi-tive	Nega-tive	Mixed	Posi-tive	Nega-tive	Mixed
4	✓	x	x	x	x	x	x	x	x
2	x	x	x	✓	x	x	x	x	x
9	x	x	x	x	x	x	✓	x	x
25	x	x	x	x	x	x	x	x	x

Note : The responses for attitude towards family planning were collected from the male spouse of each couple.

On the basis of intensive interview with the help of parent comment checklist, the investigator observed that the social life of Gojars is confined within their family members. Meetings with neighbours and relations are not very common except for occasions like marriage, mourning or religious festivals.

As far the economic conditions, the investigator observed that Gojars are still living a life of drudgery and semi-starvation despite their hard labour. Not a single family was found to have some stable income except the seasonal flow of Paltry sums by way of crops and manual labour. Out of the 45 families only two families had their male members employed as class IV employees in Police and Transport Departments. Usually children are either dressed in tattered rags or loiter half-naked. Similarly, their hygiene and cleanliness is pitiable. It is doubtful if the mothers often take their children for bath or use some detergents for washing clothes.

Suggestions

Education which is the primary requirement for social and political improvement, merits top priority for the betterment of the Gojars. Government and the planning agencies should look into the factors which prevent the Gojar children from staying in the classes. In the absence of formal and

informal programmes of education, liberation from economic and political slavery of Gojars will be only a cry in wilderness. It is obviously pertinent that social and political awareness of our backward communities depends on the level of education they receive and how they apply it in their day-to-day life. The Education Commission and the Social Welfare Organizations must come forward and contribute towards political awakening of the down-trodden and unlettered sections of our society, particularly Gojars.

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Attitude Towards School Education Among Fishermen Families

M. L. Lidhoo

Kashmir, like other parts of the country, represents people of different shades and persuasions. Because of the unique geographical configuration and beautiful scenic panorama, this valley has been a perpetual source of attraction to Emperors, Diplomats, Historians, Traders and the common man alike. This continuous caravan of people converging on the valley through all directions like Iran, Russia, China and Europe has left an indelible imprint on the history and cultural heritage of this valley. Foreign historians, who visited this valley, have left behind a wealth of literature that depicts the rich heritage in academic scholarship, pantheism, hospitability and warm heartedness of the people of Kashmir. Some of the visitors who were spell-bound by the natural beauty and resources of this land took to permanent settlement in different parts of the valley. Among these who settled in the valley and accepted the culture and ethos of the local people are Afghans, Iranians, and some tribal-clans from the Indian sub-continent. Of these, Gujjars, Dards and Tibetans are worth mentioning. These tribals, who migrated from India, have settled in different parts of the valley. By now they have become the ethnic constituents of our broader spectrum of culture and the majority community.

Like Gujjars and other tribals who migrated and settled in Kashmir, Hanjis and other ethnic groups among the Muslims are also said to have migrated and settled in the valley. In the Rajatarangni of Kalhana, translated by Stein

(1979), it is mentioned that Hanjis who were originally inhabitants of Sangaldip (Modern Ceylon) migrated into Kashmir in 112-172 A.D. During the reign of Prabhata Seena. Lawrence (1967) has given a detailed description of Hanjis. The author states, "Hanjis in Kashmir are one of the important tribals, whose population in the year 1981 was estimated to be 33,870". The author further states that exact origin of this community is not exactly known. But some of the historical records affirm, that one Raja Parabat Sein introduced boatmen to Kashmir from Sangaldip (present Ceylon or Sri Lanka). It is reported that Hanjis who migrated from Ceylon were "Vaisya" by caste but accepted the religion of majority community, i.e. Islam, after their settlement in Kashmir. Hanjis also claim their origin to Noah as their ancestor and in another account, as stated by Lawrence, they are said to be of Gypsy origin. Fauq, the author of *Tarikh-i-aquam* (1941) has presented another version, in which the author states that Malhas (Hanjis) did not exist in Kashmir before the reign of Pravara Seena 2nd. In any case Hanjis did not exist in Kashmir and they are immigrants from modern Ceylon. The word "Hanjis" (Hanz) is said to have been derived from Sanskrit word "Nishada", as Stein states, The term Nishada is generally applied to aboriginal tribes living by hunting and fishing (which).....plays a great part in the Hanjis livelihood". The Kashmiri word *Hanz* is also said to have been derived from the Sanskrit word Nishada.

By now the Hanjis (Hanz) constitute a prominent ethnic group among the Muslims of the valley. Hanjis (Hanz) are settled right from Khanabal to Baramulla on both the sides of river Jhelum. Their main concentration of settlement is at Khanabal, Srinagar, Dal-lake, Bandipora, Sopore and Baramulla. Among the Hanjis itself, there are different groups who differentiate themselves on the basis of vocational status. At the apex, there are houseboat Hanjis who cater to tourists, by providing houseboat accommodation, catering service and river and surface transport. Second in the hierarchy are the "Donga Hangis", who are engaged in water transport for commercial purposes. The third group of Hanjis are "Demb Hanjis", those who earn their livelihood by growing vegetables on water and exploiting the natural resources like sea-weed (Hill), Caltrope and Lotus roots (Nadru). The last in the

vocational and social status are the Hanjis of fishermen families who constitute a sizable section and engage themselves in the profession of fishing. According to the Census of 1981 the population of Fishermen Hanjis is stated to be fifty thousand.

While reviewing the plight of the backward sections of the valley, Hanjis figure pronouncedly, because of their unsettled life, primitive ways of living and their backwardness in educational, social and economic fields. With this consideration in mind, and on the basis of personal observation, the present investigator observed that the ambitious programmes of the Govt. for the upliftment of backward sections of the society do not seem to have benefited the fishermen Hanjis. In order to have an indepth study of the factors which have held their progress in the above mentioned areas, the investigator decided to make an intensive survey of the fishermen Hanjis settled on the banks of river Jhelum from Khanabal to Baramulla.

Keeping in view, the purpose of the proposed research, the investigator made a sample survey of the Hanjis from Khanabal to Baramulla. This sample survey provided certain important clues regarding the settlement areas, type of dwellings, routine daily life, economic assets and the plight of children of the Hanji families. The fishermen Hanjis do not have a settled life because with the change of seasons, and the rising water level of river Jhelum and Dal-Lake, they keep on moving from one station to another according to their convenience. Though there are some fishermen Hanjis who have a settled life because of their permanent hutments in areas like Sopore and Bandipora, yet they also keep track of the catchment areas of fish which are subjected to seasonal changes and water level of river Jhelum, Wullar-Lake and the Dal-lake. It is reported (Census 1981) that total population of fishermen Hanjis in the valley is about 50 thousand; of which adolescents and young adults comprise half of the population. The second highest concentration of population is of children in the age group of 3 to 14 years and the remaining population consists of those members who are above 35 years and include elderly people upto the age of 60. There are very few instances among Hanjis, where a person lives beyond the age of 65 years. This may be due to inadequate medical facilities and exposure to unbearable depression in temperature during the winter. The demographic survey of age population, sex ratio and settle-

ment stations of Hanjis helped the investigator in developing a blue-print of the study. It was decided that a randomly selected group of Hanji families right from Khanabal to Baramulla, be selected as a representative sample for indepth study. For this purpose a random-purposive pattern of sampling was adopted, on the basis of chit system, draws were taken from each settlement area in proportion to the number of families in that area. In this way, the distribution of sample for the present study comprised as :

1. Khanabal	Number of families drawn	10
2. Srinagar, Dal Lake, Tailbal, Nishat, Ishbar, Habak-Humer.	Number of families drawn.	31
3. Bandipora, Zalwan Ghat, Watlab and Mansbal.	Number of families drawn.	12
4. Sopore Town, Chinkipora, Hathishah, Sofi Hamam and Jamia Qudiem.	Number of families drawn.	23

It needs mention that the families, by and large were equated as for their socio-economic family background and the number of family members. Six families from Sopore town were dropped from final sample, because of some differences in their dwellings and living conditions. In this way the study was confined to seventy families.

Objectives and their Explanation

(i) *Child rearing practices among the fishermen Hanjis*

In the absence of formal education and exposure to mass media, the child rearing practices of fishermen families are most primitive, unhygienic and emotionally disquieting. Children among these families come as biological procreation and even after delivery, no special attention is given to neonate or the mother. This results in high infantile mortality of new born babies among the Hanji community. Child rearing in the present investigation has been specified to study the attitude of carrying woman and her family members towards the health and protection of the carrying mother and the future child.

Besides, the post-delivery care of the mother and the child has been considered as an important factor for investigation.

(ii) *Resistance towards formal education of Children*

It is beyond the comprehension of a layman, why Hanjis do not send their children to schools, when in some of the settlement pockets of fishermen Hanjis, elementary schools for both boys and girls, are located at a reasonable distance from their settlement areas. Therefore, the investigator considered to look into the reasons which betray the fishermen Hanjis from sending their children to schools.

(iii) *Perception of parents towards children and perception of children towards parents*

On the basis of observation and sample survey, the investigator observed that parents and children indiscriminately condemn each other with filthy slangs and abusive language. This exercised the attention of the investigator for an indepth study as to why the interpersonal perception of parents and children is hostile.

(iv) *Emotional cohesiveness of couples*

Emotional cohesiveness of couples in the present study refers to socially accepted norms (Husband and wife relationship) with special reference to respect for each other, common attitude towards sharing the family responsibility, emotional stability between the husband and the wife.

(v) *Attitude towards family planning and modern medical facilities*

Fishermen families are still following the primitive ways of treatment. These include blessings of faith healers, charlatans and the illiterate Hakims. Similarly, attitude towards family planning of the fishermen families is strictly negative and uncompromising. The reasons for such a conservative and nihilistic attitude merits an indepth investigation.

(vi) *Reaction towards social change*

The fishermen Hanjis doggedly stick to old and unhealthy patterns of living. These include habits of cooking, eating, toilet-training among children, hygiene and cleanliness and the

conventional pattern of circumcision among the male children. These prevailing conditions among the fishermen families may be due to illiteracy and ignorance but why they resist the change in values and living patterns merits investigation.

Procedure

On the basis of objectives, under investigation, the investigator developed an interview schedule for a number of trials on a small sample of the fishermen families. The final schedule comprising of 60 statements, with sub-clauses (in open form) dealing in child rearing practices, resistance towards formal education, attitude towards family planning and utilisation of mass-media facilities like radio, television and newspaper. Information was also collected in the area of emotional cohesiveness of the family and interpersonal perception of children on the one hand and the parents on the other. Statements on conventional living pattern and negative attitude towards modern medical facilities were also incorporated in the inventory. This research paradigm was designed on the basis of guidelines given in Hurlock (1978), Paramewaran and Bhogle (1979). Besides research designs discussed by Young (1982) were taken into consideration. This needs mention that the inventory was developed in English language and the statements were finally drafted on the basis of tryout tests.

Administration

The inventory of sixty statements and the sub-clauses was administered by the investigator and his research assistant in such a way that each statement was explained in local dialect (Kashmiri) to the family head i.e., father, mother and the responses were registered in the inventory. In this way all the 70 families were conducted for an intensive interview so as to collect information in view of the objectives of the study. The collected information was analysed under different headings and is discussed as under :

Interpretation and Discussion

The information based on the intensive interview of each individual family was classified accordingly to the statements given in the formal schedule of interview. Since the statements in the interview schedule, were presented in accordance

with the objectives under investigation, the collected information was analysed and classified in the light of the objectives.

In the first instance the investigator screened the information given by 70 fishermen families. In view of the first objective (child rearing practices) the investigator observed that the average age of the girls at the time of marriage is 13.8 years and the average age of boys at the time of marriage is 15.7 years. This information reveals that fishermen marry their daughters at a very young age. Sometimes, a bride is older than the groom which is not a usual practice among other Muslim communities of the valley. Child rearing practices of fishermen are primitive and unhygienic. A lady bears her first child when she is hardly 16 years of age. The carrying woman does not take any extra care as regards health, rest and occasional medical check-up. No gynaecologist is consulted from the day of pregnancy till delivery. In routine, the lady who is carrying transacts the household chores and the marketing of the fish almost upto the date of delivery. Delivery of a child is carried in a routine way without any extra medical care. The carrying lady usually delivers a child with the assistance of senior ladies either in the neighbourhood or among the relations. Delivery of the woman takes place within the boat in which other members (male as well as females) are living. A temporary privacy by hanging some curtains is arranged till the delivery takes place. Immediately after the birth of a child the umbilical cord is served by an experienced lady with the help of a sharp earthen piece. This is done in a very unhygienic way as the lady who takes this operation is bereft of any understanding of infection and hygiene. Even the earthen piece that is used as a blade, is not sterilised. The new born baby with a casual bath or cleaning, is muffled into old rags with a black-cloth around his body. The black is a symbol of evading evil spirits. It is difficult to assess as to what is the weight of a new born child in a fishermen family because no one bothers to do so. But since the girls who deliver for the first time and that too at a very young age, it is understandable that due to poor medical care and diet of carrying mother, the weight of a new born child may hardly be between 5 to 6 pounds. Still-births, which cause the death of the carrying mother also are not uncommon among the fisher-

men families. Out of the seventy (70) families observed by the investigator, four ladies had died at different times due to child birth. The mortality rate of the infants is around twelve per cent (12%) which is quite high as compared to the mortality rate in the normal population of the carrying ladies. The new born baby is breast-fed for a couple of days till the mother stays home. Before she resumes her routine marketing service, the neo-nate is left to the care of the senior siblings or any lady available in the house. If this arrangement is not possible as was observed by the investigator, the neonate is carried along by the mother and exposed to all sorts of dust, infection and hazards of accident. After a week's time of delivery, the neo-nate is put on bottle feeding but without any consideration of hygienic conditions while introducing the bottle to the baby. Like delivery, the survival of a child is just a chance and not by any care and precautions. The young babies of the fishermen families are seen lying on dirt and dust near the river banks or street corners where the mother markets the fish. In this way the neo-nate is deprived of affection and warmth of mother as she remains busy in household and marketing.

The children grow like wild creatures devoid of basic emotional feelings and warmth. This has been beautifully depicted by Spitz (1945) who states, "the maternal deprivation among children generates a sense of insecurity and fear; besides, the mortality rate of children deprived of maternal love and affection is higher as compared to those who have normal maternal care". The weaning and habits of toilet training are not followed according to any schedule. Weaning is because of compulsion as the mother of a neonate attends to marketing, which involves many hours to cover long distances. Similarly there are no organized norms for toilet training. It is only a question of convenience whether a child desecrates in bed, in the lap of parents or around the members he is sitting. In this way, it is not surprising that the children of fishermen families emit filthy odour. Change of clothes and bath for the young babies are not usual unless the child has soiled his clothes with urine or excreta. A young child is introduced to cereals at a very young age (around three months) when his stomach and digestive system is not developed to digest such food. This results in diarrhoea, dehydration and weak digest-

ing system. Many children of the fishermen families die due to the negligence of parents. Sometimes they die due to drowning, suffocation in bed or by diseases which are communicative. The life saving drugs for children like polio vaccine and small-pox vaccine and inoculation for Tetanus are not within the reach of fishermen families. Usually a sick child is treated by a conventional Hakim or a druggist. Treatment by pediatricians is still unknown to fishermen families.

The mental and physical development of a child among fishermen families is also haphazard. Either the child is shown permissive attitude or is treated with indulgence or indignation. In this regard, the studies on child-rearing practices conducted by Bowlby (1953) and Bogle (1977) are not in line with the observations of the present investigator, because fishermen families constitute a unique Gypsy and ethnic class, whose life style and social interaction is completely unique and in isolation with other sub-cultures.

Resistance towards formal education of children

The second objective of the study was to explore those factors which are inhospitable for the formal education of fishermen children. The survey of Seventy (70) families revealed that out of 113 male children in the age group of 6 to 14 years, only 21 children were in schools at Primary and middle standard level as shown in Table I.

TABLE—I

Table showing percentage of boys attending schools at various grade levels

S. No.	Grade	Number of boys attending schools	Percentage of boys attending schools
1.	Elementary	13	11.50
2.	Middle	6	5.30
3.	High	1	0.88
4.	Higher Secondary	1	0.88

N=21

Total number of boys	... 113
No. of boys attending schools at various grade levels	... 21
Percentage of boys attending schools	... 18.58%

Similarly, among the total number of 103 girls in the age of 6 to 12 only 15 were attending the school at elementary level. This is shown in Table II.

TABLE—II

Table showing percentage of girls attending schools at various grade levels

S. No.	Grade	No. of girls attending schools	Percentage of girls attending schools
1.	Elementary	15	4.5
2.	Middle	—	—
3.	High	—	—
4.	Higher secondary	—	—

N=15

Total number of girls	... 103
No. of girls attending schools at various grade levels.	... 15
Percentage of girls attending schools	... 14.56%

There was only one boy (in the Tailbal sample) who was attending the Higher Secondary school. On the basis of the above mentioned statistics, it is observed that out of 113 boys, only 18.6% were in schools and out of 103 girls only 14.5% were in schools. In this way the literacy percentage of fishermen families is only 11% which is far low, as compared to

the literacy statistics of the state. While looking into the factors which deprive the fishermen children of formal schooling, it was observed that (1) absence of both parents from home for long hours; (2) Non-chalant attitude of parents towards education; (3) Easy helping hand of siblings for baby sitting and household chores are some of the prominent factors. Backwardness of parents and their poor orientation towards the competition and an attitude of *laissez faire*, compound the misery of illiteracy among the fishermen families. The reaction of some illiterate boys and girls towards formal schooling was negative and discouraging. These children believe, that their ancestral profession (fishing) is a profession where formal education is not necessary and even in the absence of formal education, they will manage their livelihood. When these children were educated regarding the benefits of education, television, radio and Press (which they do not enjoy) their answer was that "we listen to radio and watch television when the programmes are in our mother tongue, otherwise we do not feel any way, that we loose anything by not being able to benefit from such sources of entertainment and information". The reaction of parents towards the education of children also revealed that fishermen parents do not like their children to be educated, lest they should sever their links with the family and ancestral profession.

Finally, it needs mention that fishermen families have a very low achievement motive and are mainly confined to mundane, conventional and routine life style. Their children also develop a fatalistic attitude and prefer contentment to struggle for higher goals. This has been observed by McClenand (1961) who states that achievement motivation for economic development is the outcome of (a) the training for achievement by parents at home, (b) the frequency of achievement themselves narrated to children and above all success and failure has rewarded the parents. Lastly, education is a process through which an individual understands his potentialities and skills which the fishermen families neither encourage nor do they repent in loosing such opportunities.

(iii) Inter-personal perception of parents and children

Perception is a gradual process which promotes social, cognitive and spatial learning. In the process of perceptual

development, children exercise the power of imagination and thus acquire knowledge through an understanding and experience. Perception also helps in learning by imitation and in this way, a child adapts himself to new situations. Children among fishermen families have a limited environment in the midst of which, they keep on shaping their thinking and imagination. Besides, the little knowledge of parents in their social, psychological and emotional development of children, is an impediment in the perceptual development of their children. Among fishermen families the woman plays a role of family head and children in the process of development become used to the conventional dominance of women over men. This has also been observed among young children where the girls play the authoritarian role and boys that of submissiveness. In the process of socialisation, the fishermen families have many 'dos' and 'don'ts', 'scolding', slangs, and punitive behaviour, is very common in their child rearing practices. In the process of role playing the fishermen boys and girls also imitate social, emotional and sexual behaviour of their parents. Permissiveness in sex behaviour (due to cramped living conditions) is taken as a normal life style. This has also been reported by Lawrence (1967) who states:

"If they are lax in morality, it is little to be wondered at, as their cramped dwelling precludes decent privacy" (1967, P. 314).

Boys usually play the role of father figure and indulge in adventurous living like rowing small boats in the midst of storms to river of lake sites. Swimming among fishermen children is a natural phenomenon and they become proficient in the game by the age of 7 to 8 years. In summary, the inter-personal perception of fishermen families and their children is free from restraints and censorship. Parents often over-look undesirable behaviour of children and sometimes beat them with severity. Children on the other hand develop perceptually in the midst of environment that prevails in and around the family. In view of these constraints the educational planners of our country should

design special teaching programmes for the social, emotional and intellectual development of the children from backward sections. In this regard Bloom (1963) has very aptly reported that half of the adult intelligence is acquired by the child at the age of 4 years and the child in lower class homes does not receive the kind of stimulation and experiences necessary for school readiness. Therefore, one of the important tasks for the planners of education is to develop skills and programmes designed to enrich the experience of over 80% of the children, who represent lower sections of our society.

(iv) Emotional cohesiveness of couples

Emotional cohesiveness among the fishermen couples (among fishermen families) has been defined as general agreement of husband and wife in relation to their personal and day-to-day problems without the parading of emotions from either side. A fisherman family usually comprises of children within the age range of 5 to 14 years. The total family of about six members is usually settled in one small boat. Because of insufficient space in the boat for making movements, usually children engage themselves in fist-fighting with each other. Since the parents stay out of the family for prolonged hours of the day the children are left without any supervision and they indulge in all types of confrontations and aggressiveness towards each other. It is, therefore, normal among the fishermen children that they exhibit a pronounced degree of aggression towards the people and objects around in the process of their development, particularly during childhood and adolescence. Bossard and Boll (1966) and Garrison (1959) have also revealed that young children who are deprived of parental affection develop an emotionally disturbed behaviour towards their siblings and peers. In the same vein Bowlby (1958) reports that people (parents) who are of immediate concern to a young child make a lasting impact on his social and emotional development. The author further states that a child deprived of parental contact and affection grows into an adolescent or adult who is more often than not bullying prone to lid-off his emotions without rhyme and reason. In the present investigation, more than two hundred children, both boys and girls in the age range

of 6 to 14 years, were conducted and it was found that these children were usually impulsive than governed by any reason or logic. They act and behave in an overt and aggressive form. In the absence of parental supervision, they become hardened, miscreants and socially undesirable elements. The emotional attitude of fishermen families and children has a basis in the childhood activities of both parents as well as in children. The relaxed and permissive behaviour among fishermen families is a usual custom and when they grow as adults they transfer the same reaction on to their children. It is not a surprise that both husband and wife address each other with slangs and profanity.

In order to develop a harmonious and emotionally cohesive atmosphere for the children of fishermen families, the social welfare agencies, the mass-media and adult literacy programmes need to be geared so as to educate the fishermen parents for a healthy, emotional and decent attitude towards their children.

(v) Attitude towards family planning and modern medical facilities

After independence India had to fight on scores of fronts, like eradication of communicable diseases, famine, poverty, illiteracy and population explosion. Although some of the evils have been held in check, but the control of population is still a big challenge before our planners. The growth of population has eroded the gigantic achievements in technology, agricultural revolution and infantile mortality. It is reported that there has been 130% growth in our population during the past 70 years whereas the agricultural and industrial growth has not kept pace with the increase in our population growth (Mamoria, 1981). The valley of Kashmir is among those states of the country which has a higher growth rate of population as compared to national statistics. The unusual growth rate of population in the State is because of large scale illiteracy, extreme level of poverty and negative attitude towards family planning, because of religious strictures. Due to crippling poverty the rural population of the valley is exposed to a number of social, economic and cultural evils. Illiteracy and early marriage compound the misery of the rural

population. Further, the rural population of Kashmir has very small land holdings and therefore they depend on numerical strength of family members who engage themselves in labour and contribute to the family income. Almost all poor families believe that more children in the family will increase the economic strength and prosperity. Lastly, it needs mention that the valley which is predominantly populated by Muslims, has not accepted family planning as it is against their religious teachings. Reports on the failure of family planning in other Muslim countries have also shown similar results. Mauldin (1971) in his report on "Muslim attitude towards family planning" has revealed that in the Halets of Muslims, it is mentioned that they should procreate for increase in population. According to him, the Halet states "Marry to increase and multiply, for I shall pride in you among the Nations on judgement date". In a pilot study, conducted by the present investigator Lidhoo (1976) on Muslim women, their education, social class and attitude towards family planning, the results have shown that Muslim women irrespective of rural, urban background, literate or illiterate all resist family planning in accordance with the directions of Islam.

In the present investigation, the seventy fishermen families conducted for investigation, rejected the idea of unnatural programme to have children by choice. According to these families children are the gifts of "Allah" and there should not be a restriction on procreation. Out of the 70 couples, the investigator found that most of these couples were in reproductive age group of 30—45 years and none of them had any idea for adopting family planning. However, on medical grounds three ladies had gone for tubectomy but they had all regrets of having lost the charm of child-bearing and subjected themselves to a number of physical ailments, as an after effect of operation. Among the seventy male members only 2 persons had gone for vasectomy and that too without the consent of their spouses. In summary, every fishermen couple expressed their reservations with strict negative attitude towards family planning. Besides the religious factor, economic necessity (for having more hands) and high infantile mortality are some of the potential factors, which dissuade fishermen families from adopting family planning. The use of any contraceptive like I.U.D., pills or

condoms, is unheard of in the fishermen couples who are having 4 to 5 children and are still in the reproductive age group.

Ladies of the fishermen families, because of occasional child births and inadequate medical facilities become victims to venereal diseases like Leucorrhea, acute back-pain and infection in the urinal track. These ladies were hardly in the age group of 20-25 years and had already borne 4 to 5 children. The hazards of early marriage, inadequate medical facilities in the absence of nutrition, have also been reported by Saunders (1936), the author states "that early marriage has adverse effect on the general health of ladies because early intercourse is injurious to health and affects reproductive functions. Besides, fairly a large number of wives die of child-birth. The young women who are just around their pubital years and have conceived are not able to carry their pregnancy, because of fragile health and under developed reproductive parts. Because of these factors these ladies have often still-birth, mis-carriages or children who can not survive after birth."

As far the general medical treatment the fishermen families are still holding to the faith of having treatment by charlatons, faith healers and conventional herbal practitioners. Very few families were found to be attending to any medical centre for treatment and care. Usually, children who suffer from cough, dysentery, flue or other ailments are treated through herbal medicines.

(vi) Reaction towards social change

Fishermen families among the backward sections of the valley, are illiterate, economically poor and socially backward. These families usually live around the river banks in an oval shaped boat, which is hardly nine feet long and three feet wide. The boat serves as a bedroom, kitchen, sitting room and above all the fishing vessel. Every thing, log, stock and barrel is dumped into this small boat. The children of fishermen are born in these very small boats, they grow, marry, procreate and die. The whole sphere of activities is confined to the boats and the river side, where the boats are stationed. The small boats, have no ceiling, except a cover of grass matting, which is inhospitably porous during winter

and reflects scorching heat during the summer. Due to cramped living conditions the adult male and female members can not maintain the upright physical posture, with the result, these people are usually seen with a hunch in their backs.

In view of the poor conditions of the fishermen families their belongings are very modest and outworn. This is true of their dress, bedding and the kitchenware. Food is usually cooked in the earthen utensils and the source of heating energy, with which the food is cooked, is the conventional use of wood. As far the privacy of children and parents no logic can explain how the members of these families stretch themselves with any privacy. It is reported by the fishermen families that one of the reasons of frequent child birth among the ladies is due to the proximity of couples with little space for stretching.

In view of general conditions of poor children in the valley, the investigator has by intention considered to study the child rearing practices of canal boat fishermen families, because children of these families are by and large deprived of essential care and social education. The fishermen families have a unique pattern of life, due to which the development of children right from conception to the age of adolescence is not only socially and emotionally unhealthy but also economically and culturally poor.

In summary the review of information collected under various headings from mundane routine life to education of children, the fishermen families are shockingly grinding under the mill of poverty day-in and day-out, with no security against natural and unforeseen tragedies or calamities, no settled future for their children. The fishermen families have not been touched by the modern technology, health care and insurance against insecurity.

The cycle of child rearing practices of canal boat families is closely linked with the economic and social life style of these families. There is every possibility that the children of these families may thrive under the sun-shine of love, affection, warmth and economically stable conditions, but this is a dream of days which are long ahead and subject to the efforts of Government and Child Welfare Agencies, who can elevate the life style of the fishermen families by providing economic

assistance and social recognition through various welfare programmes meant for the upliftment of weaker sections of the society.

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Can Teaching Success be Associated with Scholastic Competence and Personality Characteristics of Teachers ?

M.L. Lidhoo

The new upsurge in teaching learning strategy and class room composition has unceremoniously relegated the old adage "Spare the rod spoils the child" to the archives of history of teaching. The famous experiment of Barker and associates (1939), on teaching climate under democratic, autocratic and laissez-faire conditions, strengthened the fact that children cannot be kept captives on the name of teaching and learning, rather they need a psychological and emotional grooming with love and affection so as to help them thrive with their endowments and make them the important assets of future society. Similar experiments, conducted in teaching learning laboratories, by the behavioural psychologists in Europe and America offered a qualifying support to the study of Barker and his associates. The historical monument of Skinner (1953), the Science of Learning and the Art of Teaching, based on experiments with animals and children, revolutionised the total structure of teaching learning strategy. Besides Skinner's epoch making experiments and the application of mass-media in class-room teaching broke the monotony in class-rooms, where teachers ruled and students served as passive listeners. Influence of TV, Close circuit system in class rooms, brought a new revolution by having the most coveted teachers addressing students, scattered in different parts of the globe. With all these innovations some teacher educators like Ryans (1960), Biddle and Ellena (1964), Gage (1963), and Travers (1973)

Science and Mathematics to Pre-University students in the same institution for the past three years. In this way the selection of subjects is based on the pattern of purposive random sampling. As for the selection of tools Cattell's 16 PF (Form A) was chosen for the measurement of personality traits, and Raven's, advanced Progressive Matrices for measurement of intelligence. Structured opinions on the basis of principal comment check list and student comment checklist were used for the measurement of teaching success. On the basis of complete information, in all the three areas, only 500 subjects were included in the final analysis the data, thus collected, were treated to statistical analysis as shown in Tables. The analysis of data was done on the basis that student opinion was considered as the criterion variable and the other factors were treated as predictors. In this way the differentiation between the effective/ineffective teachers was completed with multi-variate analysis. The statistical treatment provided two extreme groups on the basis of criterion variable i.e. student comment check-list. Only extreme group i.e. upper 40% and lower 40% were compared for the study of characteristics associated with teacher effectiveness. In this way the mean, SD and significance of differences between the two extreme groups were computed and are given in Table I.

Besides the test of significance, the data as were also treated to 19×19 principal component analysis method. Kaiser's (1958) Varamax method was used and results showed that the resolution of six factors accounted for the 65.062 per cent of total variance, those factors which were found to be greater than $\pm .350$ or equal were retained.

The variables which clustered in four different columns, and were redesignated are (I) Personality adjustment. (II) Democratic leadership. (III) Intelligence. (IV) Emotional Stability.

Further regression analysis and Beta weights between the effective and ineffective teachers were computed and are shown in Table II. Student rating for the classification of effective and ineffective teachers was treated as criterion variable.

TABLE I
Showing results of t-test for all the 18 variables
(C.V.=Student Comment Check List (SCCL))

S. No. Variable	N=200 Effective group		N=200 Ineff- ective group		(t) ratio	Signifi- cance
	M.	S.D.	M.	S.D.		
1. Scholastic competence (Intelligence)	26.17	4.57	25.58	3.50	2.11*	*.05 level
2. Student opinion	16.82	2.24	16.17	1.94	2.40	-do-
3. A (16 P.F. scores)	10.71	2.52	9.86	1.37	7.15	-do-
4. B (16 P.F. scores)	8.92	2.25	8.81	2.65	1.1	x
5. C (16 P.F. scores)	14.4	3.95	10.5	2.69	14.4	*.05
6. B (16 P.F. scores)	13.03	3.43	10.13	2.81	13.18	-do-
7. F (16 P.F. scores)	12.32	3.10	9.65	2.00	20.53	-do-
8. G (16 P.F. scores)	13.87	3.19	11.15	3.60	14.42	-do-
9. H (16 P.F. scores)	14.6	4.44	11.18	3.71	11.79	-do-
10. I (16 P.F. scores)	11.16	2.57	9.27	9.79	13.5	-do-
11. L (16 P.F. scores)	10.28	3.15	9.12	2.19	8.92	-do-
12. M (16 P.F. scores)	12.17	3.14	9.72	3.13	8.75	-do-
13. N (16 P.F.S.)	11.46	2.41	9.31	2.99	15.35	-do-
14. O (16 P.F. scores)	10.26	4.14	8.68	3.20	5.26	-do-
15. Q ₁ (16 P.F. scores)	10.03	2.82	8.71	2.23	7.76	-do-
16. Q ₂ (16 P.F. scores)	10.02	2.82	8.85	2.41	9.00	-do-
17. Q ₃ (16 P.F. scores)	12.81	4.04	12.77	4.05	0.22	xx
18. Q ₄ (16 P.F. scores)	10.2	4.41	8.62	2.85	6.58	*.05

Note : * Significance

xx Insignificant

TABLE II

Beta Weights for 18 variables (N=200 each)

S. No.	Variable	Beta weight	t values
1.	Score on A.P.M.	0.114	5.179
2.	Principal ratings	.021	1.419
3.	A (16 PF)	0.081	3.122
4.	B „	0.145	6.462
5.	C „	0.162	5.421
6.	E „	0.049	1.594
7.	F „	0.246	7.801
8.	G „	0.074	2.803
9.	H „	0.078	3.143
10.	I „	0.124	4.305
11.	L „	0.013	0.540
12.	M „	0.090	3.095
13.	N „	0.251	7.840
14.	O „	0.073	3.20
15.	Q ₁ „	0.90	3.430
16.	Q ₂ „	0.045	1.903
17.	Q ₃ „	0.097	3.735
18.	Q ₄ „	0.033	1.364

The various statistical calculations viz. test of significance, clustering of factors and computation of Beta weights provided relevant information regarding the characteristics of effective and ineffective teachers.

Discussion and Interpretation of Results

The sample of 500 teachers, with student rating as criterion variable, was divided into two groups i.e. upper 40% and lower 40% with N=200 in each group. These two groups were compared on intelligence (through APM), Principal comment checklist (P.C.C.L.), Cattell's 16 PF. On the basis

of 't' test the data revealed that there were significant differences between effective and ineffective teachers on factors like intelligence, principal ratings, and Q3 i.e. undisciplined v/s controlled. These differences which are given in Table I have shown that effective teachers compared to ineffective teachers are superior in intelligence, popular among administrators and are emotionally stable with humbleness, venturesome attitude, forthright and placid. These findings are in line with studies conducted by Williamson (1969), Wexler (1977), Gupta (1977) and Singh (1981). On the basis of correlation of analysis of factors, associated with effective teachers, it was found that effective teachers compared to ineffective teachers are conscientious and committed to their professional obligation. Further the factor loadings computed by 19×19 correlational matrix have revealed that effective teachers have a better adjustment, possess better intelligence, deal with students and colleagues in a democratic manner and are emotionally stable. These findings have also been supported by Flander's (1970). The above mentioned qualities of effective teachers have been redesignated as leadership qualities which are associated with effective teachers. Such characteristics have also been found among effective teachers by Williamson (1969), Doyle (1974) and Ojha (1969). Intelligence has emerged as an independent factor which has been found to be superior among effective teachers as compared to in-effective teachers. In almost all the studies on teacher effectiveness level of superior intelligence has been considered as an important characteristic, Deva (1966), Debnath (1971) and Gupta (1976).

The conglomeration of a number of variables under factor analysis have revealed some important characteristics associated with effective teachers. This prompted the investigator to study direction of factors through regression analysis. With student ratings as criterion variable the regression analysis was computed for 18 variable and Beta Weights were examined for test of significance. The results revealed that principal ratings, factor E (humbleness), Factor L (Trusting), Factor Q2 (group dependent) and factor Q4 (relaxed) of 16 PF were found to be insignificant in discriminating effective and ineffective teachers. Factors like A (reservedness), factor B (less intelligence), factor G (emotional stability), factor F (Soberness), factor G (Conscientiousness), H (venturesome), I

(Tough mindedness), M (Practicality), Factor N (Forthsightl- ingness), Factor O (Placidness), Q₁ (Experimenting) and factor Q₃ (controlled), all on the basis of 16 PF were found to be insignificant.

Reviewing the statistical inferences in the light of objec- tives the results have shown a significant difference in persona- lity correlates, level of intelligence, and student ratings, which differentiate effective and ineffective teachers. On the basis of Beta weights and correlation scores the effective teachers differ significantly.

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Contingencies of Teaching Success

M. L. Lidhoo & N. A. Nadeem

Teaching success or teacher effectiveness has attracted the attention of experts from Education, Psychology and Management Personnel. Previously teaching success was considered as an important factor dependent on teacher's competence, his mastery over the subject matter accompanied with superior level of intelligence. Towards the beginning of 20th century, when application of psychology in teaching learning strategies showed better results and cohesive teacher-pupil relationship, it was felt that effective teaching merits more attention. Studies conducted by Biddle and Ellena (1964), Gage (1963), Flanders (1970), Travers (1973) and Barich (1977), have demonstrated the success of teaching or teacher effectiveness associated with personality factors, interpersonal perception of teachers and students, besides the intelligence of a teacher. Review of researches cited by Travers (1973) has shown that personality factors, level of intelligence and socially outgoing attitude, are some of the important aspects which have been found to be associated with teaching success. Some of the research studies conducted by Raina (1965), Deva (1966), Sharma (1971), Pandey (1973) and Grewal (1976), in Indian conditions have also shown that personality correlates are closely associated with successful teaching. Keeping in view the review of all these studies, it becomes increasingly difficult to isolate each individual factor associated with teaching success or teacher effectiveness. Hamachek (1971) has rightly stated, "It is a sad commentary about our educational system that we do not know what the competent—or ineffective or

good or successful or what ever you call him—teacher is".

In the light of research studies mentioned above, the present investigators considered to have a minute analysis of factors which are associated with successful teaching. Accordingly, on the basis of hierarchy, factors like, Adjustment, Intelligence and degree of perception of students and teachers were considered to be important for investigation.

An Explanation of Variables

Almost each and every study on teacher effectiveness, has established the importance of the personality characteristics of a successful teacher. In the present study, the investigators have considered that a teacher who is well composed as for his adjustment in emotional behaviour, inter-personal relationship and social interaction is concerned, will be successful. Besides a superior degree of intelligence has been considered as the pre-requisite of teaching success. Further the reaction of student and teacher towards each other is also an important factor.

Some of the objectives of the studies were : to establish as to what are the factors in personality which go with successful teaching, (ii) besides intelligence, what is the role of self-perception of teachers and perception of students towards teachers that promotes successful teaching ?

Hypotheses

1. As for personality factors, it is felt that there is no relationship between these factors and teaching success.
2. Intelligence as a cognitive factor is not an important correlate of teaching success.
3. That there is no significant relationship between teaching success and self-perception. In view of the hypotheses, personality adjustment, intelligence and self perception were considered to be predictors towards teaching success to be measured by principals ratings, student ratings and annual examination results of teachers.

Procedure

The study was conducted on a sample of 300 high and higher secondary school teachers (both male and female), ran-

domly drawn from 54 institutions, located in various districts of the valley. Each subject had a master's degree, besides B.Ed., and had been teaching in the same institution for three years. The average age of teachers ranged between 24—45 years (with a mean age of 33.04 years). Besides the 300 subjects 674 students and 54 principals of these institutions were included in the study for rating the teachers.

Three tests viz., Bell's Adjustment Inventory (for measurement of adjustment), Jalota Tandon's Test for measurement of Intelligence and Self-perception Inventory (SPI) developed by Junior author (1983) was administered to all the subjects in different sittings arranged according to the convenience of subjects. Scores for each answer sheet were converted into standard scores and arranged for statistical treatment. Besides two rating scales one for the use of Principals and other for the use of students were administered to Principals and students for collecting information regarding the teaching success.

The third criterion measure considered for the discrimination of effective and ineffective teachers was three years external results of annual examinations of all those subjects, being taught by the teachers included in the present study. The information, based on these three criterion variables was subjected to statistical analysis.

Statistical Treatment

Keeping in view, the objectives of the study, i.e. to discriminate effective and ineffective teachers on the basis of three criterion variables i.e. Principals ratings (PR), students ratings (SUR) and the examination results (SUR) viz-a-viz the predictors i.e. personality adjustment, intelligence and self perception. The following statistical analysis are computed. Firstly inter-correlations among three criterion variables i.e. Principals Ratings (PR), Subject Results (SUR) and Student Ratings (SR), were computed. This was done for understanding the degree of relationship of predictors with each other.

Secondly, correlation co-efficient between personality adjustment and criterion variables were computed for understanding the relationship between the two variables.

TABLE I
Inter-correlations among three criterion measures (N=300)

Variables	PR	(SUR)	(SR)
Principals Rating (PR)	—	.629**	.520**
Subject Result (SUR)	—	—	.567**
Student Rating (SR)	—	—	—

**P .01

TABLE II
Correlations between Teaching Success and Total Adjustment N=300

	Total Adjustment				
Teaching Success	Male Teachers N=160	Female Teachers N=140	Total Sample N=300	Young Teachers N=171	Old Teachers N=129
Principals Rating (PR)	-.179**	.037	-.058	-.158*	-.127
Subject Results (SUR)	-.186*	-.191*	.013	-.063	-.138
Students Ratings (SR)	-.186*	-.146	.067	-.183*	-.179*

* P .05

** P .01

TABLE III
Multiple Regression Analysis of the Total Sample (N=300)
with Principal Rating (PR) as the Criterion Variable

S. No.	Variable	Increment		Increment		% of variance explained	F
		R	R ²	R	R ²		
1.	Intelligence (I)	.31788	—	.10163	—	10.163	21.834**
2.	Self Perception (SP)	.38683	.6795	.14964	.94796	14.964	10.724**
3.	Home Adjustment (A 1)	.40425	.01742	.16342	.01378	16.342	1.619
4.	Health Adjustment (A 2)	.40816	.00391	.16660	.00318	16.660	0.648
5.	Social Adjustment (A 3)	.44139	0.3323	.19433	.02824	19.483	3.975*
6.	Emotional Adjustment (A 4)	.46782	.02643	.21886	.02403	21.886	3.934*
7.	Occupational Adjustment (A 5)	.54124	.07342	.29295	.07409	29.295	11.274**

** Significant at 0.01 level.

* Significant at 0.05 level.

TABLE IV
Multiple Regression Analysis of the Total Sample (N=300)
With Subject Results (SUR) as the Criterion Variable

S. No. Variable	Increment		Increment		% of Variance Explained F
	R	R ²	R	R ²	
1. Intelligence (I)	.40593	—	.16477	—	33.3874**
2. Self Perception (SP)	.46014	.05421	.21173	.04696	21.173 10.492**
3. Home Adjustment (A 1)	.47773	.01759	.22523	.01650	22.823 2.182
4. Health Adjustment (A 2)	.48204	.00431	.23237	.00414	23.237 0.854
5. Social Adjustment (A 3)	.51691	.03487	.26720	.03483	26.720 5.787*
6. Emotional Adjustment (A—5)	.56021	.5330	.31384	.04664	31.384 9.743**
7. Occupational Adjustment (A 5)	.59710	.3689	.35654	.04270	35.654 7.506**

** Significant at .01 level.

* Significant at .05 level.

TABLE V

Multiple Regression Analysis of the Total Sample (N=300)
With Students Rating (SR) as the Criterion Variable

S. No. Variable	Increment		Increment		% of Variance explained F
	R	R ²	R	R ²	
1. Intelligence (I)	.37865	—	.07764	—	7.764 16.676**
2. Self-perception (SP)	.38162	.02297	.09093	.01334	9.098 2.987
3. Home Adjustment (A 1)	.44856	.14694	.20121	.11023	20.121 9.453**
4. Health Adjustment (A 2)	.44918	.00362	.20177	.00056	20.177 0.117
5. Social Adjustment (A 3)	.46375	.01457	.21507	.01330	21.507 2.824
6. Emotional Adjustment (A 4)	.50534	.4159	.25537	.4030	25.537 3.927*
7. Occupational Adjustment (A 5)	.59283	.8749	.35145	.09608	35.145 14.619**

** Significant at 0.01 level.

* Significant at 0.05 level.

In view of the objectives of the study, the data was treated to various statistical treatment for establishment of differences between effective and ineffective teachers. Firstly correlations between criterion variables i.e. Principals ratings (PR), Subject Results (SUR) and Student Ratings (SR) were computed. This is shown in Table I. Secondly, total correlation of the subjects ($N=300$) were computed between their adjustment scores and the three criterion variables. These computations were calculated for studying the relationship between adjustment and teaching success as shown in Table II. In the Third analysis, multiple regression analysis was computed between principals ratings with the predictors. This is shown in Table III. Further, Multiple regression analysis of the total sample was computed between subject results and the predictors as shown in Table IV. Similarly, multiple regression analysis of total sample was computed between students ratings and the predictors as shown in Table V.

Lastly correlation matrix for the total sample was computed for all the ten variables, the findings, discriminating effective and ineffective teachers are discussed as under :

Discussion and Interpretation of Results

The inter-correlations between the three criterion variables have shown a positive agreement as regard the classification of effective and ineffective teachers. The inter-correlation between principals ratings and subject results, between principals ratings and student ratings and lastly between subject results and student ratings are .629, 0.520 and .567 respectively, all significant at 1% level. The correlation results between criterion variables and the total adjustment score of 300 subjects also reveal that there is a positive relationship between the adjustment of male teachers with the three criterion variables i.e. principals ratings, subject ratings and students ratings. These correlations are significant $P<0.05$. For the study of significance of the predictor variable multiple regression analysis as shown in Table III, IV, V was computed between the criterion and predictor variables. The results have shown that intelligence has turned out to be significant predictor which explains 10.168 per cent of variance in teaching success as measured by principals ratings (PR).

The F value is significant at $P<0.01$ other predictors found to be significant on the basis of principals ratings are Social and Emotional adjustment both significant at 5% level. The results of the regression analysis with subject results as the criterion variable for total sample have also shown that intelligence is an important predictor which explains 16.47% of variance in teaching success. Other variables which have been found significantly good predictors for teaching success are Emotional adjustment, Occupational adjustment and Social adjustment with their respective F values, significant at one per cent level as shown in table IV. Lastly the regression analysis of the total sample, with student ratings, as the criterion measure has shown that Home adjustment, Occupational adjustment and Emotional adjustment are again high predictors for teaching success, the respective F values of the predictors are 9.453, 14.169 and 16.676 all significant at one per cent level. To sum up, level of intelligence, Occupational adjustment have emerged as the most powerful factors which determine teaching success as shown in Table V. All in all the analysis reveals that all the seven predictors explain 35.14% of the variance. Student ratings as a measure of teaching success, intelligence, self-perception and personality adjustment constitute 8%, 1.33% and 26.04% respectively.

The results of the study, as regards, level of intelligence, Home adjustment, Occupational adjustment, as the most important factors of teaching success are in line with studies conducted by (Sherry 1964, Raina 1965, Sharma 1971, Pandey 1973, Patted 1975, Grewal 1976, Gupta 1977 and Mathew 1980).

Again on the basis of differences in the predictive variables of effective and ineffective teachers (High/Low) in relation to three criterion variables, it is observed that on the basis of principals ratings the differences are significant in Intelligence, self-perception, social adjustment, emotional and occupational adjustment, it is observed that the subject results (criterion variables) have also significantly discriminated effective and ineffective teachers on factors like intelligence, self-perception, Social, Emotional, and Occupational adjustment.

Finally, on the basis of student ratings (criterion variable) the effective and ineffective teachers have been discrimi-

nated on factors like Intelligence, positive perception, Home adjustment, Emotional adjustment and Occupational adjustment. Correlation matrix for the criterion variables and the predictors was computed for understanding the relationship between the criterion variables and predictor variables.

Review of the Inferences

The review of statistical inferences shown in various tables has led to the following inferences, (I) the two hypotheses that personality factors and level of intelligence do not bear any relationship with effective teaching, stands rejected on the basis of multiple regression analysis of personality adjustment factors with principals ratings as criterion variables. It is established that there is a close relationship between Intelligence, Self-perception, Emotional and Occupational adjustment, which support the thesis, that these factors are closely associated with effective teaching. This is also established through subject results and student ratings as the criterion variables. Besides one way multiple regression analysis the correlation matrix for a total sample ($N=300$) was computed for all the thirteen variables, comprising three criterion variables and ten predictors. The results have shown that there is a positive and high correlation between principal rating and subject results, ($r=.629$), between principal ratings and student ratings ($r=.520$).

Similarly, subject results have also shown a positive and high correlation with student rating ($r=.576$), and intelligence ($r=.405$). In the areas of personality adjustment the correlation matrix has shown that there is a positive and significant correlation between Home and Health, Home and Emotional adjustment. Again there is a positive correlation between total adjustment and occupational adjustment ($r=.818$).

To sum up the results it needs mention that Intelligence, Occupational adjustment, Self-perception and Social adjustment have emerged as the potential factors which are associated with effective teaching. Intelligence plays a vital role for a teacher to be effective and successful.

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